

Minnesota Power Tree and Shrub Mitigation Plan

For Bison 4 (PU-13-127) and 230 kV HVTL (PU-11-620)





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Tree and Shrub Mitigation Plan- Bison 4 & 230 kV HVTL

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Introduction

Throughout 2013 and 2014 Minnesota Power (an ALLETE company) constructed its Bison 4, 204 MW wind energy conversion facility (Facility) as well as an associated 11 mile long 230 kilovolt (kV) high voltage transmission line (HVTL). During construction of both, some trees and shrubs were disturbed. In keeping with the North Dakota Public Service Commission's (PSC) Certificate of Site Compatibility for Bison 4 and the Certificate of Corridor Compatibility for the HVTL, Minnesota Power has developed this Tree and Shrub Mitigation Plan. This mitigation plan will facilitate the replacement of the trees and shrubs disturbed during construction and minimize any associated environmental impacts.

Number and Variety of Trees

Post construction vegetation surveys were performed for both the Bison 4 and HVTL project areas to determine the number of stems disturbed, the species disturbed and their location. The post construction vegetation surveys were performed by Western Ecosystems Technology Inc. (WEST). The following table (Table 1-1) shows the total number of trees and shrubs disturbed during construction of Minnesota Power's Bison 4 Facility.

Table 1-1 Trees Disturbed During Construction

Trees/Tall Shrubs	-	-
American elm	Ulmus americana	32
Boxelder	Acer negundo	13
Chokecherry	Prunus virginiana	50
Eastern cottonwood	Populus deltoides	4
Green ash	Fraxinus pennsylvanica	31
Hawthorn	Crataegus	15
Peachleaf willow	Salix amygdaloides	2
Russian olive	Elaeagnus angustifolia	5
Siberian elm	Ulmus pumila	52
American plum	Prunus americana	6
Total		210
Shrubs	-	-
Buffaloberry	Shepherdia	45
Siberian peashrub	Caragana arborescens	35
Total	-	80



Mitigation Plan

Following the requirements of the PSC Certificate of Site Compatibility for the Bison 4 Facility and the Certificate of Corridor Compatibility for the HVTL, Minnesota Power will mitigate trees and shrubs disturbed during construction. The disturbed trees and shrubs will be replaced at a minimum ratio of 2:1. However, the actual planting of most species will be at a ratio closer 3:1 to account for mortality associated with any planting/re-vegetation effort.

All disturbed trees and shrubs will be replaced by the same or similar species in following with the PSC's Tree and Shrub Mitigation Specifications.

Upon completion of mitigation activities, the planting site will then be monitored for three years to ensure that there has been a 75% survival rate based on a **2:1** planting regime. Survival surveys will occur in the fall of each year and will be used to determine if any additional mitigation activities will be required.

Proposed Number, Variety, Type

Table 1-2 lists the number of stems disturbed during construction, the species disturbed and the minimum number of mitigation stems required. The percent survival will be determined assuming a 2:1 planting ratio.

In following with recommendations provided by local Soil Conservation Districts, range management professionals and local expertise, Minnesota Power has opted to replace the species that were disturbed by construction with species that are native, that do not have noxious qualities, are suitable for available soil types and are available for purchase with local NRCS offices in North Dakota. As a result of these parameters, the following adjustments to mitigation species have been made:

- **Trees/Tall Shrubs**

Siberian elm and Russian olive are non-native species and will not be used for mitigation. Instead, both species will be replaced with Green Ash which is native to North Dakota. Due to problems with disease resistance and availability, both Eastern cottonwood and American elm will be replaced with Green Ash as well. Hawthorn is considered a noxious species in North Dakota. As a result, Minnesota Power will be replace those disturbed stems with chokecherry. The two disturbed peachleaf willows will be replaced with American Plum.



- **Shrubs**

Due to soil type, availability and desired species, Buffaloberry and Siberian pea shrub will be replaced with Common lilac.

Table 1-2 # Replacement stems (by Species) for Bison 4 and associated 230 kV HVTL			
Common Name	Scientific Name	Plants Removed	Minimum mitigation stems
Green ash	Fraxinus pennsylvanica	124	248
Chokecherry	Prunus virginiana	65	130
Boxelder	Acer negundo	13	26
American plum	Prunus americana	8	16
Lilac	Syringa vulgaris	80	160

Location and Date of Replacements

A total of 17 landowners had trees or shrubs affected by the project. In an effort to maintain customer satisfaction, project acceptance and a high standard of public relations, Minnesota Power has developed an alternative site for the mitigation plantings to occur, if requested by land owners. Land owners have their choice to have mitigation activities occur either on their ownership or on Minnesota Power's alternative site.

Four landowners preferred to have mitigation plantings occur on their property. Nine land owners preferred mitigation (planting) activities not occur on their ownership and have instead opted for Minnesota Power's alternative site. Four landowners did not respond after two direct mailings and three phone call attempts. As a result, those mitigation stems will be planted at Minnesota Power's alternative site as well.

The Minnesota Power alternate site is located in Morton County in Section 4 - Township 140N - Range 86W. See Attached Figure #1 for mitigation site location information.



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Tree and Shrub Mitigation Plan- Bison 4 & HVTL

Figure 1

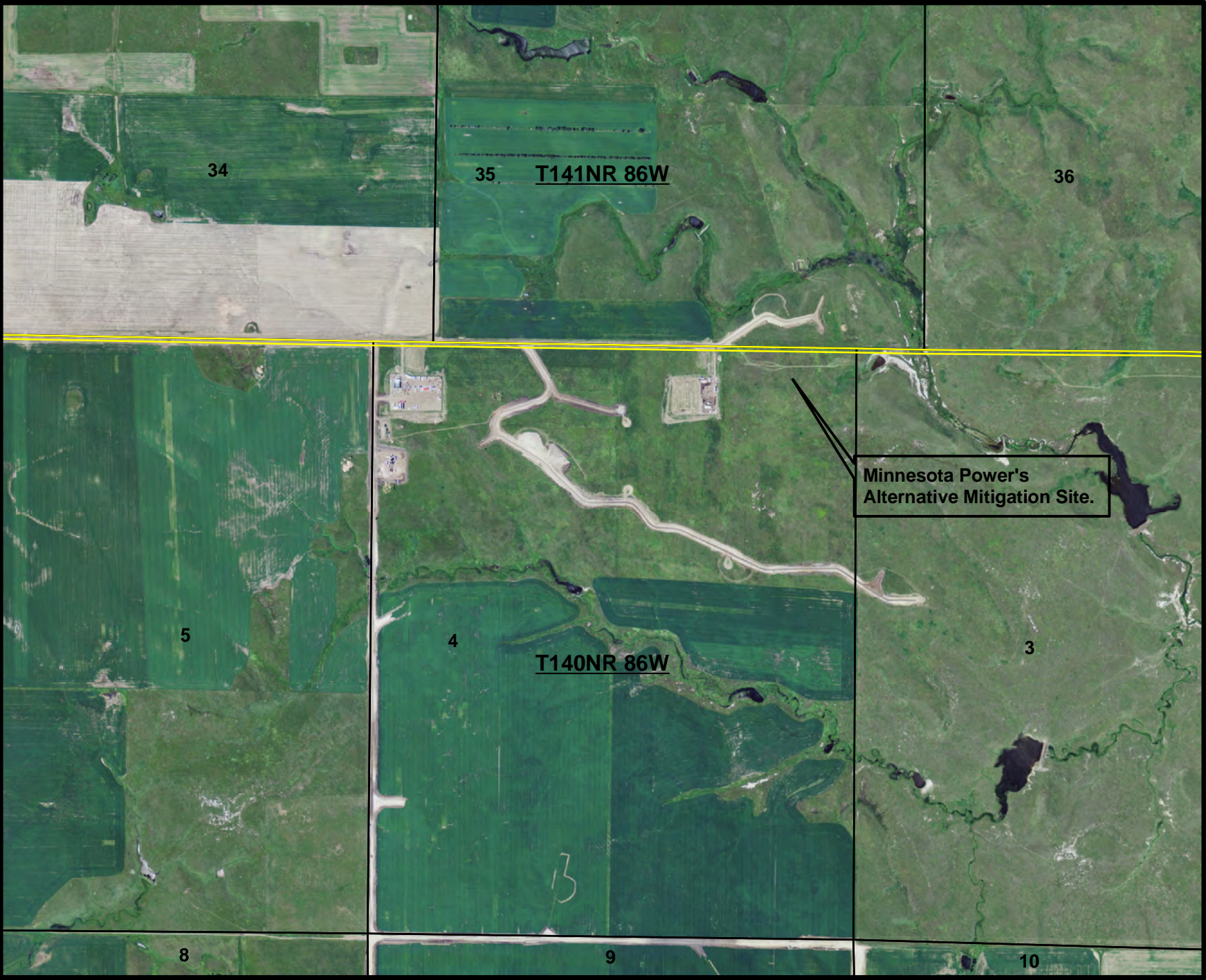
-Mitigation Site Location



Case # PU-13-127 & PU-11-620

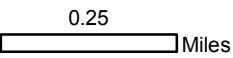
Figure 1

Minnesota Power Alternative Mitigation Site.



Legend

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- PLSS_townships
- PLSS_sections





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Tree and Shrub Mitigation Plan- Bison 4 & HVTL

Appendix A

-Alternative Mitigation Agreements



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Alternative Mitigation Location Agreement

Warren E. and Delores C. Reiner, CONSENTOR, for valuable consideration, hereby acknowledge consent and convey unto MINNESOTA POWER legally incorporated as ALLETE, Inc., a Minnesota corporation, CONSENTEES and its successors, the right to perform tree and shrub mitigation activities at a mitigation restoration site which is not located on the CONSENTOR personal property.

The CONSENTOR understand that this replaces their rights to have tree and shrub mitigation, as required by applicable permits issued by the North Dakota Public Service Commission, activities performed on the CONSENTOR personal property in favor of a location determined at the CONSENTEES discretion.

CONSENTOR

NAME HERE Warren Reiner

NAME HERE Delores Reiner

COUNTY OF Oliver.

This instrument was drafted by:
Minnesota Power
30 West Superior Street
Duluth, MN 55802



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Alternative Mitigation Location Agreement

David L. and Carol J. Skalsky, CONSENTOR, for valuable consideration, hereby acknowledge consent and convey unto MINNESOTA POWER legally incorporated as ALLETE, Inc., a Minnesota corporation, CONSENTEES and its successors, the right to perform tree and shrub mitigation activities at a mitigation restoration site which is not located on the CONSENTOR personal property.

The CONSENTOR understand that this replaces their rights to have tree and shrub mitigation, as required by applicable permits issued by the North Dakota Public Service Commission, activities performed on the CONSENTOR personal property in favor of a location determined at the CONSENTEES discretion.

CONSENTOR

NAME HERE

NAME HERE

COUNTY OF Oliver.

This instrument was drafted by:
Minnesota Power
30 West Superior Street
Duluth, MN 55802



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Alternative Mitigation Location Agreement

Clinton H. Redmann, CONSENTOR, for valuable consideration, hereby acknowledge consent and convey unto MINNESOTA POWER legally incorporated as ALLETE, Inc., a Minnesota corporation, CONSENTEES and its successors, the right to perform tree and shrub mitigation activities at a mitigation restoration site which is not located on the CONSENTOR personal property.

The CONSENTOR understand that this replaces their rights to have tree and shrub mitigation, as required by applicable permits issued by the North Dakota Public Service Commission, activities performed on the CONSENTOR personal property in favor of a location determined at the CONSENTEES discretion.

CONSENTOR

NAME HERE Clinton Redmann

COUNTY OF Oliver.

This instrument was drafted by:
Minnesota Power
30 West Superior Street
Duluth, MN 55802



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Alternative Mitigation Location Agreement

Jason J. and Melanee L. Pulver, CONSENTOR, for valuable consideration, hereby acknowledge consent and convey unto MINNESOTA POWER legally incorporated as ALLETE, Inc., a Minnesota corporation, CONSENTEES and its successors, the right to perform tree and shrub mitigation activities at a mitigation restoration site which is not located on the CONSENTOR personal property.

The CONSENTOR understand that this replaces their rights to have tree and shrub mitigation, as required by applicable permits issued by the North Dakota Public Service Commission, activities performed on the CONSENTOR personal property in favor of a location determined at the CONSENTEES discretion.

CONSENTOR

NAME HERE

Jason J. Pulver

NAME HERE

Melanee Pulver

COUNTY OF Oliver.

This instrument was drafted by:
Minnesota Power
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Alternative Mitigation Location Agreement

William and Louise Schultz, CONSENTOR, for valuable consideration, hereby acknowledge consent and convey unto MINNESOTA POWER legally incorporated as ALLETE, Inc., a Minnesota corporation, CONSENTEES and its successors, the right to perform tree and shrub mitigation activities at a mitigation restoration site which is not located on the CONSENTOR personal property.

The CONSENTOR understand that this replaces their rights to have tree and shrub mitigation, as required by applicable permits issued by the North Dakota Public Service Commission, activities performed on the CONSENTOR personal property in favor of a location determined at the CONSENTEES discretion.

CONSENTOR

NAME HERE William Schultz

NAME HERE Louise Schultz

COUNTY OF Oliver.

This instrument was drafted by:
Minnesota Power
30 West Superior Street
Duluth, MN 55802



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Alternative Mitigation Location Agreement

Darren and Cheri Klingenstein, CONSENTOR, for valuable consideration, hereby acknowledge consent and convey unto MINNESOTA POWER legally incorporated as ALLETE, Inc., a Minnesota corporation, CONSENTEES and its successors, the right to perform tree and shrub mitigation activities at a mitigation restoration site which is not located on the CONSENTOR personal property.

The CONSENTOR understand that this replaces their rights to have tree and shrub mitigation, as required by applicable permits issued by the North Dakota Public Service Commission, activities performed on the CONSENTOR personal property in favor of a location determined at the CONSENTEES discretion.

CONSENTOR

NAME HERE Darren Klingenstein NAME HERE Cheri Klingenstein

COUNTY OF Oliver.

This instrument was drafted by:
Minnesota Power
30 West Superior Street
Duluth, MN 55802



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Alternative Mitigation Location Agreement

Dennis and Joan Peltz, CONSENTOR, for valuable consideration, hereby acknowledge consent and convey unto MINNESOTA POWER legally incorporated as ALLETE, Inc., a Minnesota corporation, CONSENTEES and its successors, the right to perform tree and shrub mitigation activities at a mitigation restoration site which is not located on the CONSENTOR personal property.

The CONSENTOR understand that this replaces their rights to have tree and shrub mitigation, as required by applicable permits issued by the North Dakota Public Service Commission, activities performed on the CONSENTOR personal property in favor of a location determined at the CONSENTEES discretion.

CONSENTOR

NAME HERE

NAME HERE

COUNTY OF Oliver.

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Tree and Shrub Mitigation Plan- Bison 4 & HVTL

Appendix B

-Woodland Inventory Procedures & Survey Results

- Bison 4
- SW Oliver 230 HVTL Extension
- Mitigation Survey Results

Bison 4- Woodland Inventory Procedures



NATURAL RESOURCES ♦ SCIENTIFIC SOLUTIONS

Western EcoSystems Technology, Inc. ♦ 415 W. 17th St., Suite 200 ♦ Cheyenne, WY 82001
Phone: 307.634.1756 ♦ Fax: 307.637.6981 ♦ Website: www.west-inc.com

TECHNICAL MEMORANDUM

DATE: July 1, 2013

TO: Mitch Shields, Merjent

FROM: Elizabeth Lack, Clayton Derby, and Terri Thorn WEST, Inc.

RE: Tree and Shrub Inventory – Bison IV Wind Energy Project Site,
Oliver and Mercer Counties, ND

Western EcoSystems Technology, Inc. (WEST) was contracted to inventory trees and shrubs at the Bison IV Wind Energy Project site in Oliver and Mercer Counties, ND (Figure 1). The purpose of the inventory was to meet the Public Service Commission's requirements for tree and shrub mitigation, which includes an inventory of trees and shrubs that are anticipated to be cleared during project construction (Attachment 1).

Methods

The tree and shrub inventory was conducted by two experienced WEST botanists from June 3 to June 12, 2013. The inventory area included all areas within a 100' radius of turbine locations and within 100' wide corridors along collector lines and roads. These survey areas were loaded as shapefiles on Trimble XT sub-meter accurate GPS units that were used for navigation and for documenting the locations of trees and shrubs. The inventory consisted of walking all survey areas and collecting a GPS point at the location of each individual tree or shrub, or groups of trees and/or shrubs; the species, number of plants, and number of stems per plant were also recorded. In cases where a tree row extended in to the survey area, a GPS line was recorded to document the location of the tree row. In general, plants with a single main trunk were counted as trees, while plants with multiple stems were counted as shrubs; however, a few individuals with multiple stems were counted as trees due to their large size and general tree-like form. Best professional judgment and knowledge of botanical characteristics of observed species was used to determine a single plant with multiple stems from multiple individual plants. For example, western snowberry (*Symphoricarpos occidentalis*), a common shrub in the project area, sprouts from rhizomes, forming dense colonies. Each colony was counted as one plant with many stems.

Results

Trees

A total of 48 tree locations were recorded in the survey area; some of these locations represented more than one tree (see maps – Attachment 2). A total of 360 individual trees were counted, representing eight species (Table 1). Green ash and Siberian elm were the most common species encountered. Most of the trees in the survey area were part of planted tree rows; others however, particularly the cottonwoods, were isolated individuals that appeared to occur naturally (i.e., not planted).

Table 1. Trees within the Bison IV Survey Area

Common Name	Scientific Name	Number of Individuals
American elm	<i>Ulmus americana</i>	28
Bebb willow	<i>Salix bebbiana</i>	1
Boxelder	<i>Acer negundo</i>	3
Eastern cottonwood	<i>Populus deltoids</i>	23
Green ash	<i>Fraxinus pennsylvanica</i>	183
Ponderosa pine	<i>Pinus ponderosa</i>	16
Russian olive	<i>Elaeagnus angustifolia</i>	7
Siberian elm	<i>Ulmus pumila</i>	99

Shrubs

A total of 715 shrub locations were recorded in the survey area; some of these locations represented more than one shrub (see maps – Attachment 2). A total of 2,168 individual shrubs were counted, representing 17 species (Table 2). The most common shrubs were Western snowberry, two species of buffaloberry, prairie rose, and chokecherry.

Table 2. Shrubs within the Bison IV Survey Area

Common Name	Scientific Name	Number of Individuals
American elm	<i>Ulmus americana</i>	43
American plum	<i>Prunus americana</i>	60
Chokecherry	<i>Prunus virginiana</i>	284
Creeping juniper	<i>Juniperus horizontalis</i>	4
Eastern redcedar	<i>Juniperus virginiana</i>	58
Golden currant	<i>Ribes aureum</i>	3
Hawthorn	<i>Crataegus</i> sp.	32
Narrowleaf willow	<i>Ulmus pumila</i>	13
Prairie rose	<i>Rosa arkansana</i>	321
Silver buffaloberry	<i>Shepherdia argentea</i>	58
Russet buffaloberry	<i>Shepherdia canadensis</i>	374
Russian olive	<i>Elaeagnus angustifolia</i>	4

APPENDIX B

Common Name	Scientific Name	Number of Individuals
Serviceberry	<i>Amelanchier alnifolia</i>	2
Siberian elm	<i>Ulmus pumila</i>	19
Siberian peashrub	<i>Caragana arborescens</i>	125
Western snowberry	<i>Symphoricarpos occidentalis</i>	686
Unknown ornamental		82

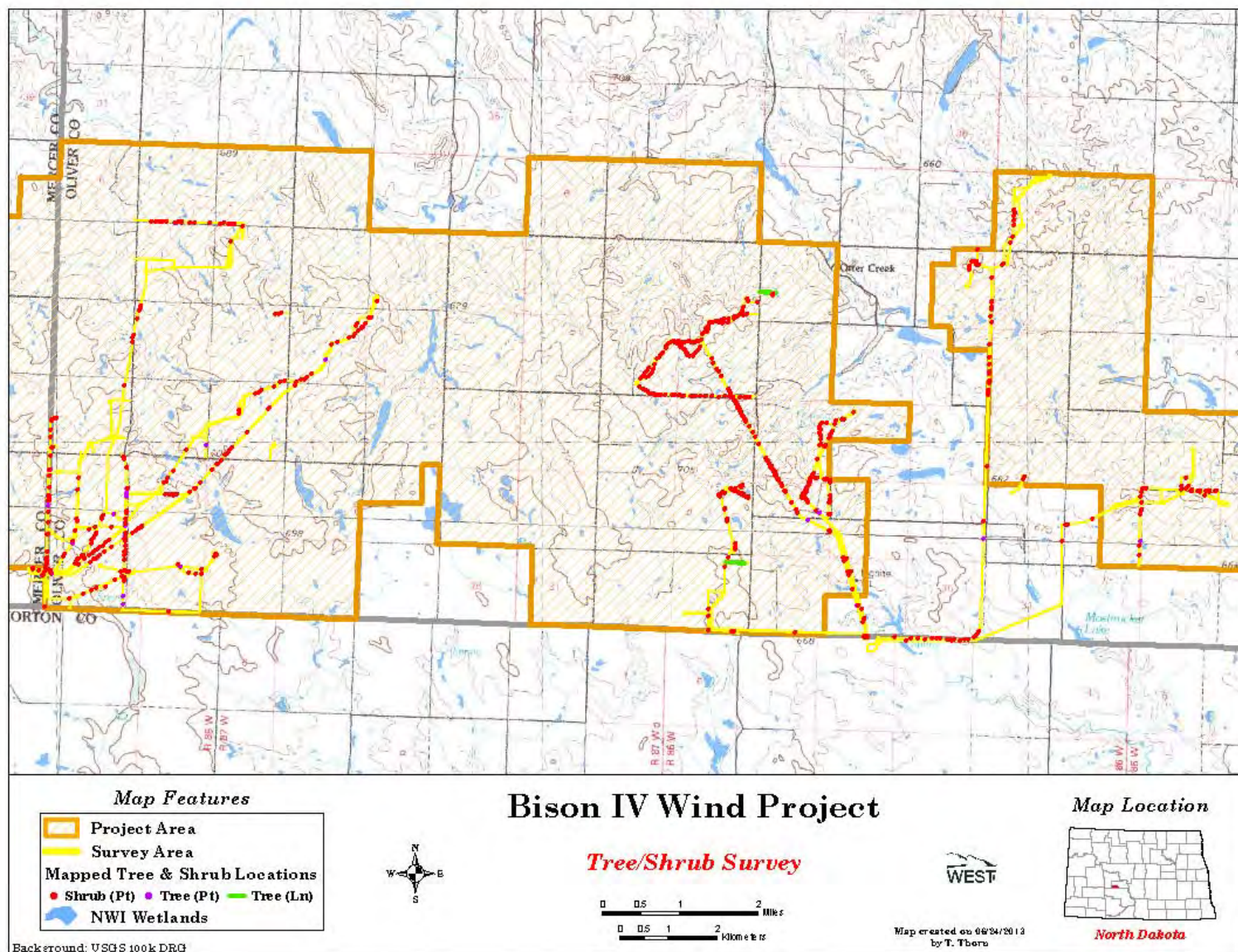


Figure 1. Bison IV Wind Project Tree/Shrub Inventory Survey Area

ATTACHMENT 1

Case No. PU-07-169

Tree and Shrub Mitigation Specifications

Inventory

1. Trees and shrubs anticipated to be cleared, including those that are considered invasive species or noxious weeds (e.g., *Caragana arborescens*, *Elaeagnus angustifolia*, *Rhamnus cathartica*, *Tamarix chinensis*, *T. parviflora*, *T. ramosissima*, *Ulmus pumila*), shall be inventoried before cutting. The inventory shall record the location, number, and species of trees and shrubs.
2. In windbreaks, shelterbelts and other planted areas, trees or shrubs anticipated to be cleared, regardless of size, shall be inventoried for replacement.
3. In native growth areas, trees anticipated to be cleared that are 1 inch diameter at breast height ("dbh") or greater shall be inventoried for replacement.
4. In native growth areas, shrubs anticipated to be cleared in the permanent right-of-way shall be inventoried for replacement.
5. In native growth areas outside the permanent right-of-way, shrubs shall be cut flush with the surface of the ground, taking care to leave the naturally occurring seed bank and root stock intact. If soil disturbance is necessary, the native topsoil shall be preserved and replaced after construction. Shrubs shall be allowed to regenerate naturally where native topsoil is preserved and replaced. Where native topsoil is not preserved and replaced, shrubs anticipated to be cleared shall be inventoried for replacement.
6. In native growth areas, trees and shrubs may be inventoried by actual count or by sampling method that will properly represent the woody vegetation population. A sampling plan developed by the company, filed with the North Dakota Public Service Commission (NDPSC) and approved prior to the start of construction shall define the sampling method to be used for trees, for tall shrubs and for low shrubs. The data from the sample plots shall be extrapolated to the total acreage of the wooded area to be cleared to determine the species and quantity of trees and shrubs to be replaced.

Clearing for Construction

7. Trees and shrubs shall be selectively cleared, leaving mature trees and shrubs intact where practical.
8. The width of clear cuts through windbreaks, shelterbelts and all other wooded areas shall be limited to 50 feet or less unless otherwise approved by the NDPSC.

9. If the area of trees or shrubs actually cleared differs from the area inventoried, the difference in number of trees and shrubs to be replaced shall be noted on the inventory.

Replacement

10. Prior to tree/shrub replacement, documentation identifying the number and variety of trees removed as well as the mitigation plan for the proposed number, variety, type, location and date of replacement plantings shall be filed with the NSPSC for approval.
11. Tree replacement shall be on a 2 to 1 basis with 2-year-old saplings. Shrub replacement shall be on a 2 to 1 basis with stem cuttings.
12. Trees and shrubs shall be replaced by the same species or similar species suitable for North Dakota growing conditions as recommended by the North Dakota Forest Service.
13. Tree and shrub replacement shall not be conducted within a 20 to 30 foot wide path over the pipeline to facilitate visual inspections of the right-of-way in accordance with U.S. Department of Transportation safety regulations.
14. Landowners shall be given the option of having replacement trees/shrubs planted off the right-of-way on the landowner's property or waiving that requirement in writing and allowing those replacement trees/shrubs to be planted at alternative locations.
15. At the conclusion of the project, documentation identifying the actual number, variety, type, location and date of the replacement plantings shall be filed with the NDPSC.
16. Tree/shrub replacements shall be inspected once a year for three years, on about the anniversary of the plantings, and, on or shortly before October 1 of each year, a report shall be submitted to the NDPSC documenting the condition of replacement planting and any woodlands work completed. If after three years from the anniversary of the plantings the survival rate is less than 75%, the NDPSC may order additional planting(s).

SW Oliver 230 HVTL- Woodland Inventory Procedures

WETLAND AND WATERBODY DELINEATION AND HABITAT ASSESSMENT REPORT

Southwest Oliver 230_kV Transmission Line
Oliver, Morton and Mercer Counties, North Dakota
Project #3598

Prepared for:

Minnesota Power.

December 2, 2011

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1.0 SCOPE OF WORK

The Southwest Oliver 230_kV Transmission Line is being developed by Minnesota Power to expand electrical transportation capacity from new and proposed wind energy projects within North Dakota. The project involves the construction of an 11-mile 230 kilovolt (kV) transmission line that begins at the existing Bison Windfarm Substation and runs west through Oliver, Morton and Mercer Counties. Carlson McCain delineated the extent of wetland areas and waterbodies, inventoried trees and shrubs, and assessed potential habitat of endangered and threatened species and raptor species within the 130-foot project right of way (Project Area) and adjacent to the proposed project (**Appendix A, Index Map**). Table 1 lists the sections within the Project Area.

Table 1-Project Area

Sections	Township, Range
31-36	T141N, R87W
31-35	T141N, R86W
4	T140N, R86W

The Project Area consists of agricultural fields, native and tame grasslands, depression wetlands, and shallow drainages (**Appendix A, Figures 1**). Wheat and sunflowers are common crops in agricultural fields although many of the fields were fallow at the time of the survey(s). The project is located within the Lower Heart (10130203) and Knife (10130201) Hydrologic Unit Codes (HUC). Numerous wetlands, consisting of isolated depressions, and intermittent and perennial drainages, are located in the Project Area.

The wetland and waterbody field delineation, tree and shrub inventory, and habitat assessment was conducted October 24 and November 1-4, 2011, by Miranda Meehan, Natural Resource Specialist, Chad Tucker, Wildlife Biologist, and John Snyder, GIS Specialist, Carlson McCain, Inc.

2.0 SAMPLING PROCEDURES

2.1 Wetland and Waterbody Delineation

The wetland field delineation was conducted in accordance with the U.S. Army Corps of Engineers (USACE) 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* (Manual).

Wetland areas were systematically evaluated by using numerous observation points to define their boundaries. The frequency of observation points was increased in transitional areas between uplands and lower areas to accurately identify wetland boundaries based on soils, vegetation, hydrology, and landscape. Boundaries were digitally recorded with a Trimble GeoXH Global Positioning System (GPS).

Wetland areas were documented with a single or multiple observation points. Paired upland and wetland soil pits were evaluated for wetland areas. The Wetland Determination Data Form of the Great Plains Manual was completed for the observation points. Climatic conditions were considered typical prior to and during the evaluation.

Existing vegetation was classified using hydrophytic vegetation criteria outlined in the Manual and the *National List of Plant Species that Occur In Wetlands: 1996 National Summary* (Kartesz 1996), and *National list of plant species that occur in wetlands: North Plains (Region 4)* (Reed 1988). Hydric soil indicators were determined using the *Field Indicators of Hydric Soils in the United States; Guide for Identifying and Delineating Hydric Soils, Version 7.0* (USDA-NRCS 2010). Hydrology was determined on-site by observation of hydrologic indicators. Aerial photography was used to assist hydrologic determinations.

Field conditions and existing resource information were used to identify possible wetlands within the Project Area. Oliver County NAIP 2009 and 2006 aerial photographs, U.S. Fish and Wildlife Service National Wetland Inventory (USFWS 2011), and the digital soil survey of Oliver County (USDA-NRCS 2011), were consulted prior to the wetland field delineation. Possible waterbodies were identified with the U.S. Geological Survey (USGS) Water100k Line GIS shapefile and by Ordinary High Water Mark (OHWM) criteria.

2.2 Tree and Shrub Inventory

Carlson McCain utilized the North Dakota Public Service Commission approved “Tree and Shrub Inventory Plan - “Southwest Oliver 230_kV Transmission Line” (Inventory Plan) while conducting the tree and shrub inventory. Standard data forms were completed for each inventoried tree/shrub site. Each site was assigned a unique identification that consisted of the site’s section, township, range, and identification number, i.e. 1414760-01. Data collected at each site included: observer, date, site id, woodland type, tree/shrub species, invasive species, tally, and total number.

Trees and shrubs located in windbreaks, shelterbelts, and other planted areas in the Project Area were counted by direct stem count or by the approved Tree Sampling Method. These inventoried trees were categorized into two groups:

- 1) Less than two inches diameter at breast height (DBH)
- 2) Greater than two inches DBH

In native growth areas, trees ≥ 1 inch DBH were inventoried for replacement. Direct stem counts were conducted for small native growth areas while the Tree Sampling Method was used in high-density woodland areas. Inventoried trees were categorized into two groups:

- 1) one-inch to two inches DBH
- 2) greater than two inches DBH

The extent of colony-forming shrubs were delineated with a GPS unit in the field or on aerial photos. Colony-forming shrubs include June berry, hawthorn, chokecherry, plum, western snowberry, buffaloberry, and sandbar willow.

3.0 RESULTS

3.1 Wetland and Waterbody Delineation

Eight wetlands and nine waterbodies were identified and delineated within the Project Area (Appendix A, Figures 1-1 – 1-8). The Project Area includes two isolated depressions, six riparian wetlands, and nine waterbody crossings (Table 2). Perennial and intermittent waterbodies that contained hydrophytic vegetation and other wetland indicators within their pools and runs were identified as wetlands. Table 2 summarizes the evaluation criteria for the wetland within the Project Area. A total of 3.55 wetland acres and 1.91 drainage feature acres were identified and delineated in the Project Area.

Table 2- Wetland Summary

Wetland / Waterbody Feature ID	Acreage	NWI	Wetland Type
33141086-W1	0.23	PUBFx	Depression (Isolated)
32141086-W1	0.17	NA	Perennial Stream (Connected)
31141086-W1	2.20	NA	Depression (Isolated)
31141086-W2	0.06	NA	Perennial Stream (Connected)
36141087-W1	0.26	NA	Intermittent Stream (Connected)
34141087-W1	0.15	NA	Perennial Stream (Connected)
34141087-W2	0.38	NA	Intermittent Stream (Connected)
33141087-W1	0.10	NA	Intermittent Stream (Connected)
34141086-S1	0.09	NA	Intermittent Stream (Connected)
32141086-S1	0.20	NA	Perennial Stream (Connected)
32141086-S2	0.27	NA	Perennial Stream (Connected)
31141086-S1	0.08	NA	Perennial Stream (Connected)
36141087-S1	0.43	NA	Intermittent Stream (Connected)
34141087-S1	0.19	NA	Perennial Stream (Connected)
34141087-S2	0.40	NA	Intermittent Stream (Connected)
33141087-S1	0.11	NA	Intermittent Stream (Connected)
31141087-S1	0.14	NA	Intermittent Stream (Connected)

Prairie cordgrass (*Spartina pectinata*) and cattails dominate the isolated depression wetland located within a cultivated field (3314106-W1). The remaining wetlands within the Project Area were associated with intermittent and perennial streams. Streams located within cropland are characterized by the native species prairie cordgrass (*Spartina pectinata*), broadleaf cattail (*Typha latifolia*), and northern reedgrass (*Calamagrostis stricta*) and the introduced species foxtail barley (*Hordeum jubatum*) and reed canarygrass (*Phalaris arundinacea*). Depressional and connected wetlands and waterbodies located within grassland communities are characterized by prairie

cordgrass (*Spartina pectinata*), narrow-leaf cattail (*Typha angustifolia*), slender wheatgrass (*Agropyron caninum* v. *majus*), woolly sedge (*Carex lanuginose*), and quackgrass (*Agropyron repens*).

A description of the wetland type and documentation of the vegetation, hydrology, and hydric soils were recorded on the associated USACE Wetland Determination Data Forms (**Appendix B**) and are identified by observation point number (e.g., 090154095-w1, 09154095-u1). The observation points are identified as wetland (w) or upland soils (u).

3.2 Tree and Shrub Inventory

Native and planted trees and shrubs were inventoried at 15 individual sites along the proposed Project. Nine tree and shrub species were identified within the Project Area (**Appendix A, Figures 2-1 – 2-8**), (Table 3). The majority of tree and shrub areas within the Project Area are planted and include windbreaks and tree rows adjacent to cropland. However, there are two native tree and shrub areas located in an area of native prairie and adjacent to a drainage feature. Green ash (*Fraxinus pennsylvanica*) is the most common tree species in the Project Area. Green ash (*Fraxinus pennsylvanica*), a native species, has been extensively planted in the state. The invasive tree species Siberian elm (*Ulmus pumila*) is common throughout the Project Area in planted areas. Buffaloberry (*Shepherdia argentea*) is the most prevalent native shrub and chokecherry (*Prunus virginiana*) is common. Tree and Shrub Count Forms are included in **Appendix C**.

Table 3-Summary of Tree and Shrub Inventory

Species	Species (CODE)	Common Name	Growth Form	Reproduction	Invasive or Non-native	Native			Planted			Overall Total
						1-2"	2"+	Total	<2"	2"+	Total	
<i>Caragana arborescens</i>	cararb	Peashrub (Siberian)	shrub	seed	Yes				9		9	9
<i>Fraxinus pennsylvanica</i>	frapen	Ash (Green)	tree	seed	No				23	216	239	239
<i>Populus deltoides</i>	popdel	Cottonwood	tree	seed/ suckering	No		3	3		3	3	6
<i>Prunus virginiana</i>	pruvir	Chokecherry	shrub	seed/ suckering	No				70		70	70
<i>Salix amygdaloides</i>	salamy	Willow (Peachleaf)	tree	seed	No					6	6	6
<i>Shepherdia argentea</i>	shearg	Buffaloberry	shrub	rhizomatous, colony forming	No	1,265		1,265				1,265
<i>Syringa vulgaris</i>	syrvul	Lilac (Common)	shrub	rhizomatous, colony forming	Yes				11		11	11
<i>Ulmus americana</i>	ulmame	Elm (American)	tree	seed	No					13	13	13
<i>Ulmus pumila</i>	ulmpum	Elm (Siberian)	tree	seed	Yes				3	105	108	108
Totals						1,265	3	1,268	116	343	459	1,727

4.0 HABITAT ASSESSMENT

Agricultural fields and native grasslands surrounding waterbodies comprise the majority of the habitat within and around the Project Area. Intermittent streams and depression wetlands are located in and around the Project Area. The native grasslands are heavily encroached upon by non-native grassland species including smooth brome (*Bromus inermis*), Kentucky bluegrass (*Poa pratensis*), and crested wheat grass (*Agropyron cristatum*). Native areas are displayed on the Wetland and Waterbody Figures in **Appendix A**. Table 4 summarizes the native grassland areas identified during the survey.

Table 4- Native Areas

Section	Township	Range	Tract	Acres	Habitat
36	141	88	Southeast 1/4	39	Native Prairie
31	141	87	Southwest 1/4	37	Native Prairie
31	141	87	East 1/2	264	Native Prairie
32	141	87	South 1/2	121	Native Prairie
33	141	87	Southwest 1/4	131	Native Prairie
34	141	87	Southeast 1/4	241	Native Prairie
31	141	86	Southwest 1/4	64	Native Prairie

Assessments for federally listed endangered, threatened, and candidate species were conducted by evaluating historic and present occurrences, and by determining if potential habitat exists within the Project Area. Determinations were made concerning direct and cumulative effects of the proposed activity on each species and their habitat. Determinations made for federally listed species are:

- No effect
- Not likely to adversely affect
- Is likely to adversely affect

Currently, six federally listed species have been documented in Oliver County including the interior least tern (*Sterna antillarum*), whooping crane (*Grus americana*), black-footed ferret (*Mustela nigripes*), pallid sturgeon (*Scaphirhynchus albus*), gray wolf (*Canis lupus*), and piping plover (*Charadrius melodus*). In addition, critical habitat for the piping plover is listed as present in the county (USFWS 2011a). Suitable habitat for the interior least tern and pallid sturgeon is limited to the Missouri River system and therefore none of this habitat is in the Project Area. The least tern typically utilizes the Missouri River as a flyway, however, because this is a migratory species it may occur in areas where habitat does not generally exist. These species are not addressed in this report (USFWS 2011b and 2011c).

The Sprague's pipit (*Anthus spragueii*) and the Dakota skipper (*Hesperia dacotae*) are candidate species for federal listing in Oliver County under the Endangered Species Act. No legal requirement exists to protect candidate species; however, the U.S. Fish and Wildlife Service (USFWS) considers these species to have significant value and are worth protecting.

Table 5 - Federally Protected Species

Oliver County	
Species	Status
Interior Least Tern	Endangered
Whooping Crane	Endangered
Black-footed Ferret	Endangered
Pallid Sturgeon	Endangered
Gray Wolf	Endangered
Piping plover	Threatened – Designated Critical Habitat
Dakota Skipper	Candidate
Sprague's Pipit	Candidate

4.1 Endangered Species

4.1.1 Gray Wolf

Gray wolves (*Canis lupus*) historically ranged throughout North America. With the exception of Minnesota, Wisconsin, Michigan, Montana, Idaho, Washington, and Wyoming, the gray wolf is absent from the lower 48 states. Gray wolves have been documented in North Dakota since 1990; however, their presence in North Dakota is sporadic, consisting of occasional dispersing animals from Minnesota and Manitoba (USFWS 2008). Gray wolf habitat varies from woodlands to grasslands, but they generally avoid populated areas and areas with high road densities (Johnson 1999).

Gray wolves were not observed during the field surveys and there is no potential habitat located in the Project Area due to the prevalence of agricultural fields. Wolves are long distance dispersers and with the surrounding areas of Montana, Saskatchewan, and Minnesota having breeding wolf populations, there is the potential for transient wolves to enter the Project Area.

4.1.2 Whooping Crane

Whooping cranes (*Grus americana*) historically nested in North Dakota in the 19th Century, but now only migrate through the state in the spring and fall. Along their migration route, whooping cranes use large shallow marshes for roosting and loafing while feeding in harvested grain fields. The primary threats to whooping cranes are power lines, illegal hunting, and habitat loss (Texas Park and Wildlife 2008). Twenty-five cranes were reported in the 2009 fall migration and twelve were reported in the 2010 spring migration through North Dakota (Stehn 2010).

Suitable resting and feeding habitat is located within the Project Area. Whooping cranes may fly over, temporarily feed, or loaf in the area. A field survey for Whooping cranes was conducted along the route and no cranes were observed.

Minnesota Power will coordinate with the US Fish and Wildlife Service to mark new transmission lines with bird flight diverters. Minnesota Power will also coordinate with the US Fish and Wildlife Service to

mark an equal length of existing and previously unmarked transmission lines within the Corridor to help reduce the potential for mortality associated with transmission line collisions.

4.1.3 Black-footed Ferret

Historically, black-footed ferrets (*Mustela nigripes*) were found in the southwest portion of North Dakota but their occurrence is unlikely or questionable at this time. The black-footed ferret requires expansive black-tailed prairie dog (*Cynomys ludovicianus*) colonies for food and den habitat. The Black-Footed Ferret Survey Guidelines (USFWS 1989) states that 80 acres is the minimum size prairie dog habitat needed to support black-footed ferrets. Black-footed ferret reintroduction into the wild began in 1991 (Black-footed Ferret Recovery Implementation Team 2009). There have been nineteen reintroduction sites, but none in North Dakota at this time.

At present time, there is no population of black-footed ferrets within the Project Area. There is no suitable habitat within the Project Area, as there are no prairie dog colonies in or near the Project Area.

4.2 Threatened Species / Critical Habitat

4.2.1 Piping Plover

North Dakota's population of piping plovers (*Charadrius melodus*) was 496 breeding pairs in 1991 and was reduced to 399 breeding pairs by 1996. Approximately 75% of piping plovers in North Dakota nest on prairie alkali lakes, and 25% use the Missouri River (USFWS 2011d). The USFWS designated the piping plover as threatened in North Dakota and with specific areas in Oliver, Mercer and Morton Counties as designated Critical Habitat (USFWS 2010). Nest locations are most likely selected due to their sparse vegetation. In North Dakota, they nest on alkali lakes, sandy relatively narrow beaches (300 - 1,200 feet wide), and barren river sandbars.

There are no large alkali wetlands or river sandbars within one mile of the Project Area; therefore, no suitable nesting habitat is located within or adjacent to the Project Area. No individuals were sighted during the habitat assessment.

4.3 Candidate Species

4.3.1 Sprague's pipit

The Sprague's pipit (*Anthus spragueii*) is a ground nesting bird that breeds and winters on open grasslands. It feeds mostly on insects, spiders, and some seeds. The Sprague's pipit is closely tied with native prairie habitat and breeds in the north-central United States in Minnesota, Montana, North Dakota and South Dakota as well as south-central Canada. Between 1996 and 2007, the population of Sprague's pipits in North Dakota declined by 2% (Sauer et. al. 2008). During the breeding season, Sprague's pipits prefer large patches of native grassland with a minimum size requirement thought to be approximately 145 ha (358.3 ac). The species prefers to breed in well-drained, open grasslands and avoids grasslands with excessive shrubs. Preferred grass height is estimated to be between 10 and 30 cm. They may avoid roads, trails, and habitat edges.

Sprague's pipits were not observed during the habitat assessment; however, native grassland and potential habitat is located in and adjacent to the Project Area. The largest native area that the Project Area dissects is 264 acres. The Project Area is located in close proximity to section line roads where habitat fragmentation has already occurred.

4.3.2 Dakota Skipper

Dakota skippers (*Hesperia dacotae*) are currently listed as a candidate species in North Dakota and have been documented in Oliver County. Larvae of the Dakota skipper feed on grasses, favoring little bluestem. Adults emerge in mid-Jun, feeding on the nectar of flowering native forbs. Harebell (*Campanula rotundifolia*), wood lily (*Lilium philadelphicum*), and purple coneflower (*Echinacea angustifolia*) are common components of their diet (Canadian Wildlife Service, 2004). Dakota skippers are most likely to be found along river valleys or in mesic segments of mixed grass prairie.

The Project Area does not contain suitable habitat for the Dakota skipper, as the grasslands inside the Project Area are dominated by non-native species. Activities inside the Project Area may temporarily disturb some forage species of the Dakota skipper, but is not likely to cause a decline in the Dakota skipper population.

4.4 Raptor Survey

Northern harriers (*Circus cyaneus*) were observed during field surveys. Raptor nests were not observed during the habitat assessment; however, nesting habitat is in and adjacent to the Project Area. The field survey was conducted at a time when these species are not actively nesting; therefore, it is recommended that a raptor nest survey be conducted if construction of the project is delayed until the next nesting season.

5.0 REFERENCES

- Canadian Wildlife Service Environment Canada. 2004. Assessment and Status Report on the Dakota Skipper (*Hesperia dacotae*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Environment Canada, Ottawa, ON
- Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. *Classification of wetlands and deepwater habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online. <http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm> (Version 04DEC1998) >Accessed October 2011.
- Environmental Laboratory. 1987. *Corp of Engineers Wetlands Delineation Manual*. Wetlands Research Program. Technical Report Y-87-1. Department of the Army, Waterways Experiment Station, US Army Corp of Engineers, Vicksburg, Mississippi, USA.
- Environmental Laboratory. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)*. U.S. Army Corps of Engineers, U.S. Army Engineer Research and Development Center Vicksburg, Mississippi, USA.
- Grondahl, C. and K. Martin. No Date. North Dakota's endangered and threatened species. North Dakota State Game and Fish Departments' Non-game Program, Bismarck, ND. Jamestown, ND: Northern Prairie Wildlife Research Center Online. <http://www.npwrc.usgs.gov/resource/wildlife/endanger/index.htm> (Version 16JUL97).
- Johnson, K.D. 1999. Return of the Wolf? Northern Prairie Wildlife Research Center. Jamestown, ND. North Dakota Outdoors 61(8):14-16. <http://www.npwrc.usgs.gov/resource/mammals/wolfrtrn/index.htm> (Version 05MAY99).
- Kartesz, J.T. 1996. *National List of Plant Species that Occur In Wetlands: 1996 National Summary*. Biota of North America Program. US Fish and Wildlife Service. <<http://www.fws.gov/new/bha/list96.html>> Accessed October 2011.
- Reed, P.B., Jr. 1988. *National list of plant species that occur in wetlands: North Plains (Region 4)*. U.S. Fish and Wildlife Service Biological Report 88(26.4). 64pp.
- Sauer, J. R., J. E. Hines, and J. Fallon. 2008. *The North American Breeding Bird Survey, results and analysis 1966–2007*. Version 5.15. 2008.
- Stehn, T. 2010. *Whooping Crane Recovery Activities, October 2009 – September 2010*. Department of the Interior, US Fish and Wildlife Service, Whooping Crane Coordinator Report.

- Texas Parks and Wildlife Department. 2008. Whooping Crane (*Grus americana*). Texas Parks and Wildlife Department, Austin, TX. <http://www.tpwd.state.tx.us/huntwild/wild/species/whooper>
- USDA-NRCS. 2010. *Field Indicators of Hydric Soils in the United States*—Guide for Identifying and Delineating Hydric Soils, Version. 7.0 in G.W. Hurt, L.M. Vasilas, and C.V. Noble, editors. USDA-NRCS in cooperation with the National Technical Committee for Hydric Soils.
- USDA-NRCS. 2011. Soil Survey of Oliver County, North Dakota. <http://websoilsurvey.nrcs.usda.gov/app> Accessed November 2011.
- US Farm Service Agency. 2009. National Agriculture Imagery Program, Oliver County aerial photograph.
- USFWS. 2011. United States Fish and Wildlife Service. National Wetlands Inventory. <http://wetlandsfws.er.usgs.gov/NWI/> Accessed October 2011.
- USFWS. 2011a. County occurrence of Endangered, Threatened and Candidate species and designated critical habitat in North Dakota. Department of the Interior, US Fish and Wildlife Service Washington, DC 20240 <http://www.fws.gov/northdakotafieldoffice/SEtable.pdf> Revised September 2010.
- USFWS. 2011d. Piping Plover (*Charadrius melodus*). Department of the Interior, US Fish and Wildlife Service, North Dakota Field Office, Mountain-Prairie Region. http://www.fws.gov/northdakotafieldoffice/endspecies/species/piping_plover.htm Last updated March 14, 2011.
- USFWS. 2008. Gray Wolf (*Canis lupus*). Department of the Interior, US Fish and Wildlife Service, North Dakota Field Office, Mountain-Prairie Region. http://www.fws.gov/northdakotafieldoffice/endspecies/species/gray_wolf.htm
- USFWS. 2010. Piping Plover Department of the Interior, US Fish and Wildlife Service, Endangered Species, Mountain-Prairie Region. <http://www.fws.gov/mountain-prairie/species/birds/pipingplover/> Last updated March 30, 2010.
- USFWS. 1999. Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act. US Fish and Wildlife Service, Denver, Colorado, and Albuquerque, New Mexico.
- USFWS. 1989. Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act. US Fish and Wildlife Service, Denver, Colorado, and Albuquerque, New Mexico.
- USGS. Glen Ullin, ND. 1:24,000-scale USGS quadrangles. US Geological Survey. http://www.umesc.usgs.gov/data_library/maps_quads_figs/quad_indexes.html

Appendix A
Figures

Mercer

Oliver

Morton

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Legend

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- Counties
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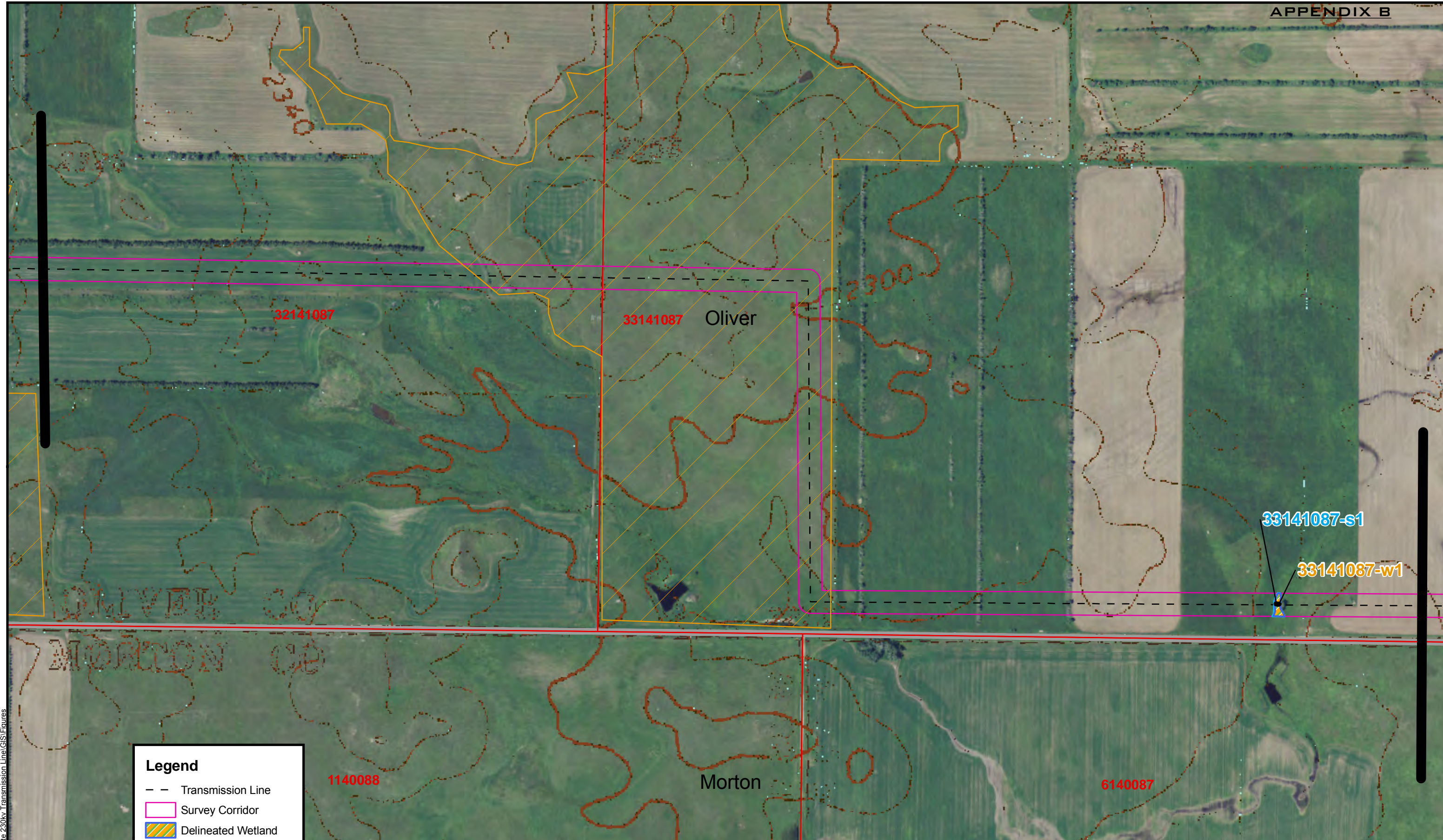
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Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin

**Southwest Oliver 230_kV
Transmission Line Project
Minnesota Power**

INDEX SHEET
Aerial & Topography Map

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Legend

- — Transmission Line
- Survey Corridor
- Delineated Wetland
- Delineated Waterbody
- Native Areas
- Counties
- matchlines



1:6,000 1 inch = 500 feet
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 Base Map: NAIP 2010 Oliver County;
 USGS 24K Quad, Glen Ullin

**Southwest Oliver_230 kV
 Transmission Line Project
 Minnesota Power**

**FIGURE 1-2
 Wetland and Waterbody
 Aerial & Topography Map**

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Legend

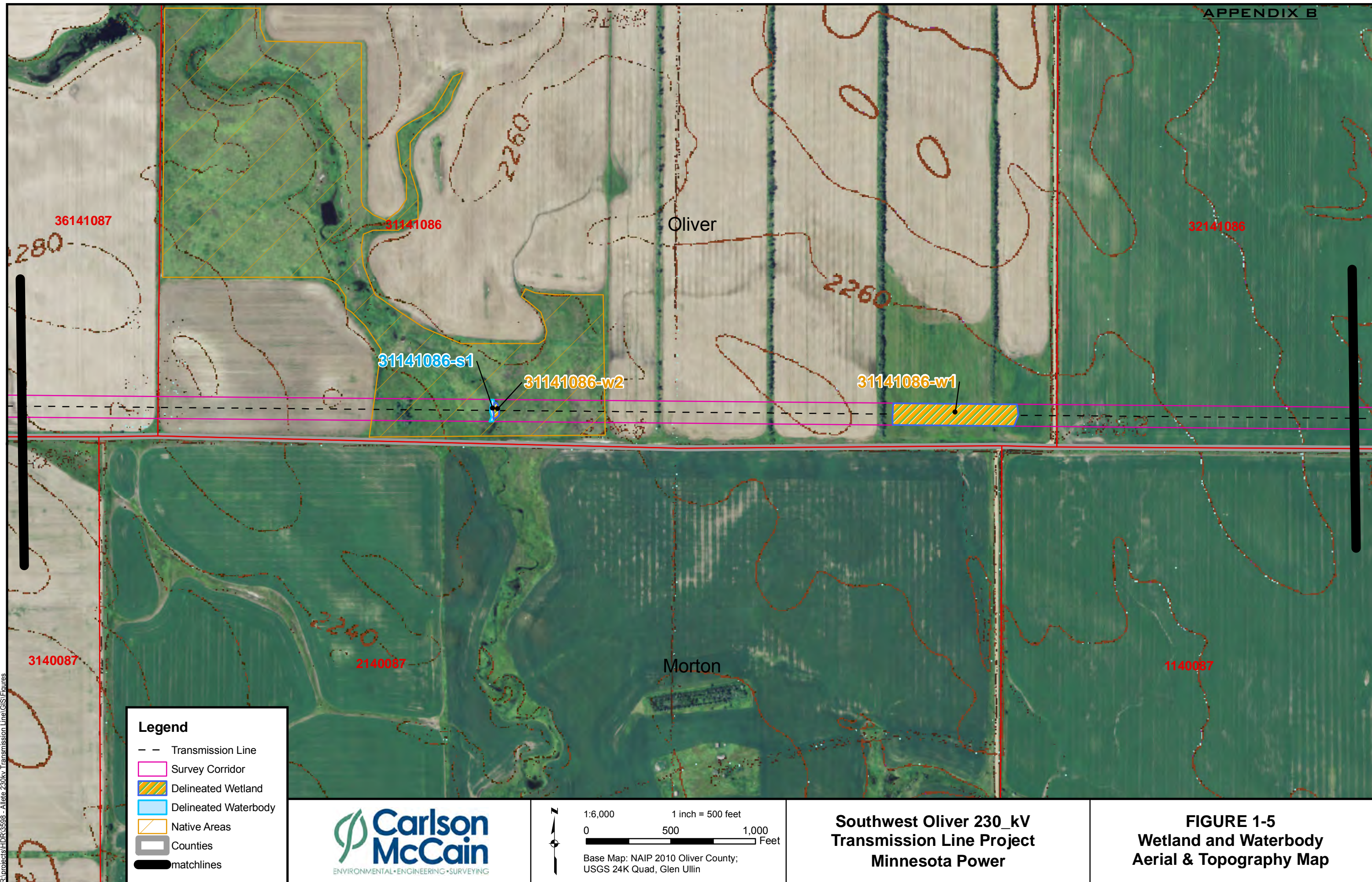
- Transmission Line
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 Base Map: NAIP 2010 Oliver County;
 USGS 24K Quad, Glen Ullin

**Southwest Oliver 230_kV
 Transmission Line Project
 Minnesota Power**

**FIGURE 1-3
 Wetland and Waterbody
 Aerial & Topography Map**



Legend

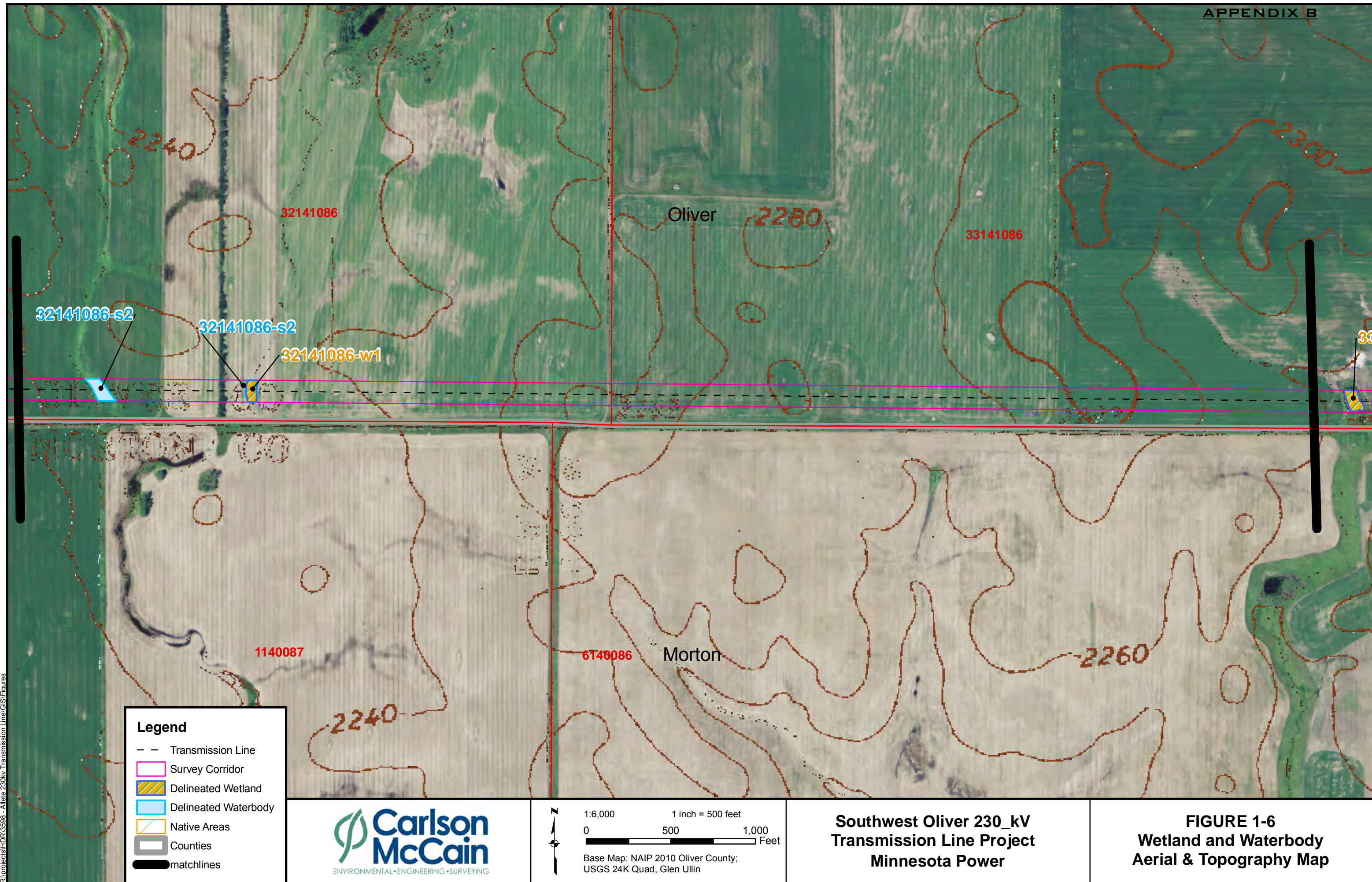
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 Base Map: NAIP 2010 Oliver County;
 USGS 24K Quad, Glen Ullin

**Southwest Oliver 230_kV
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**FIGURE 1-5
 Wetland and Waterbody
 Aerial & Topography Map**



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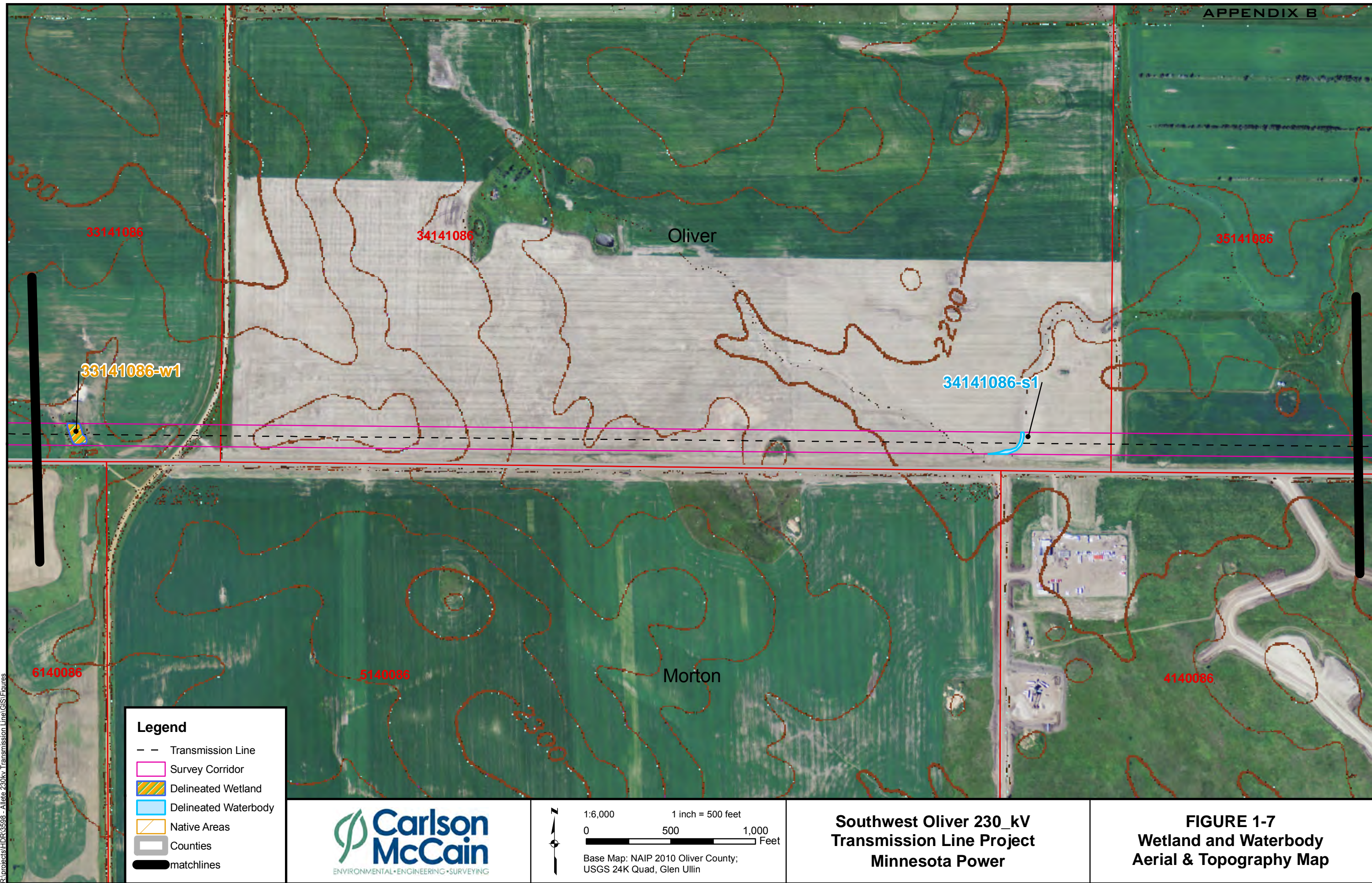
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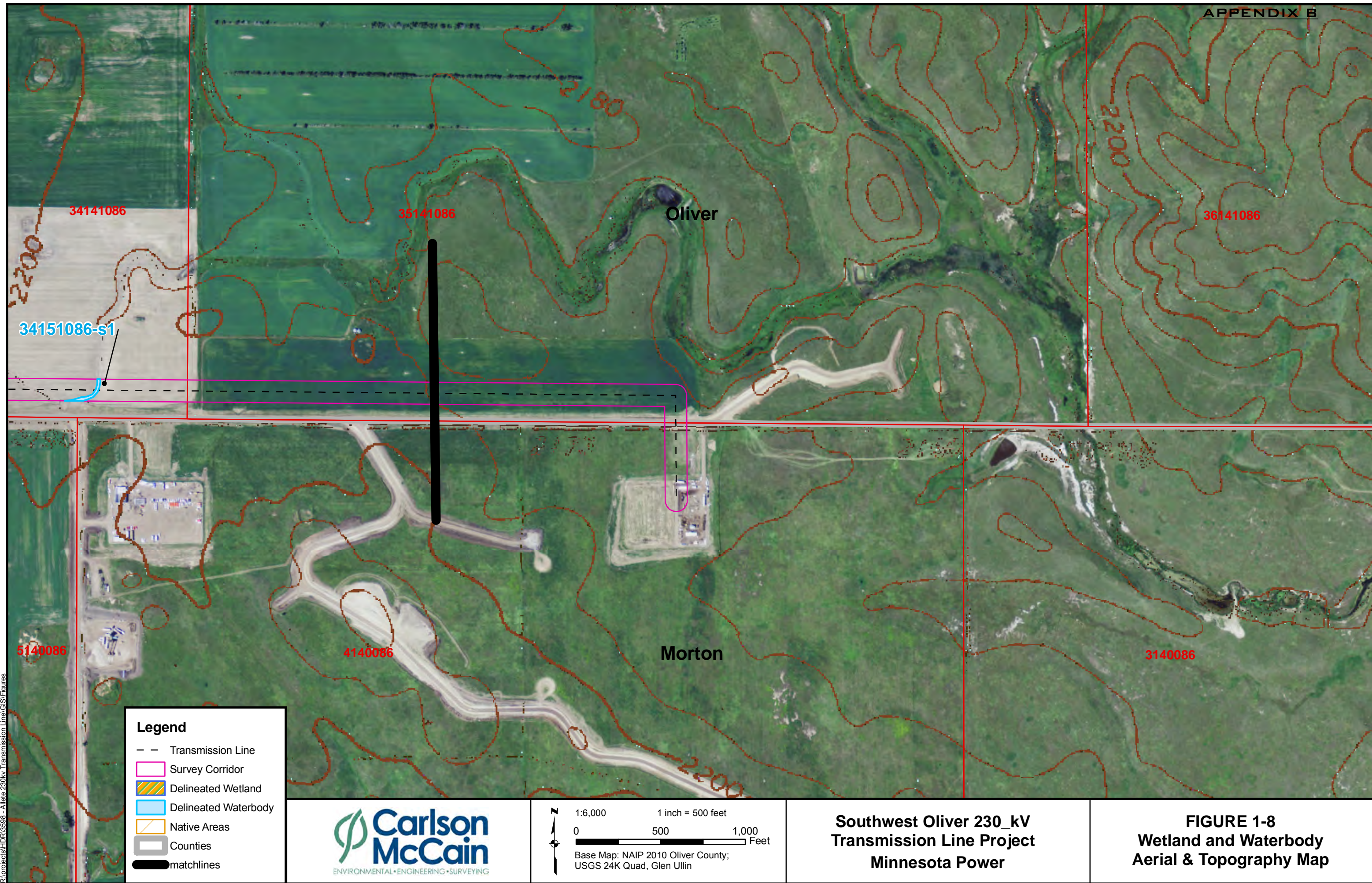


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USGS 24K Quad, Glen Ullin

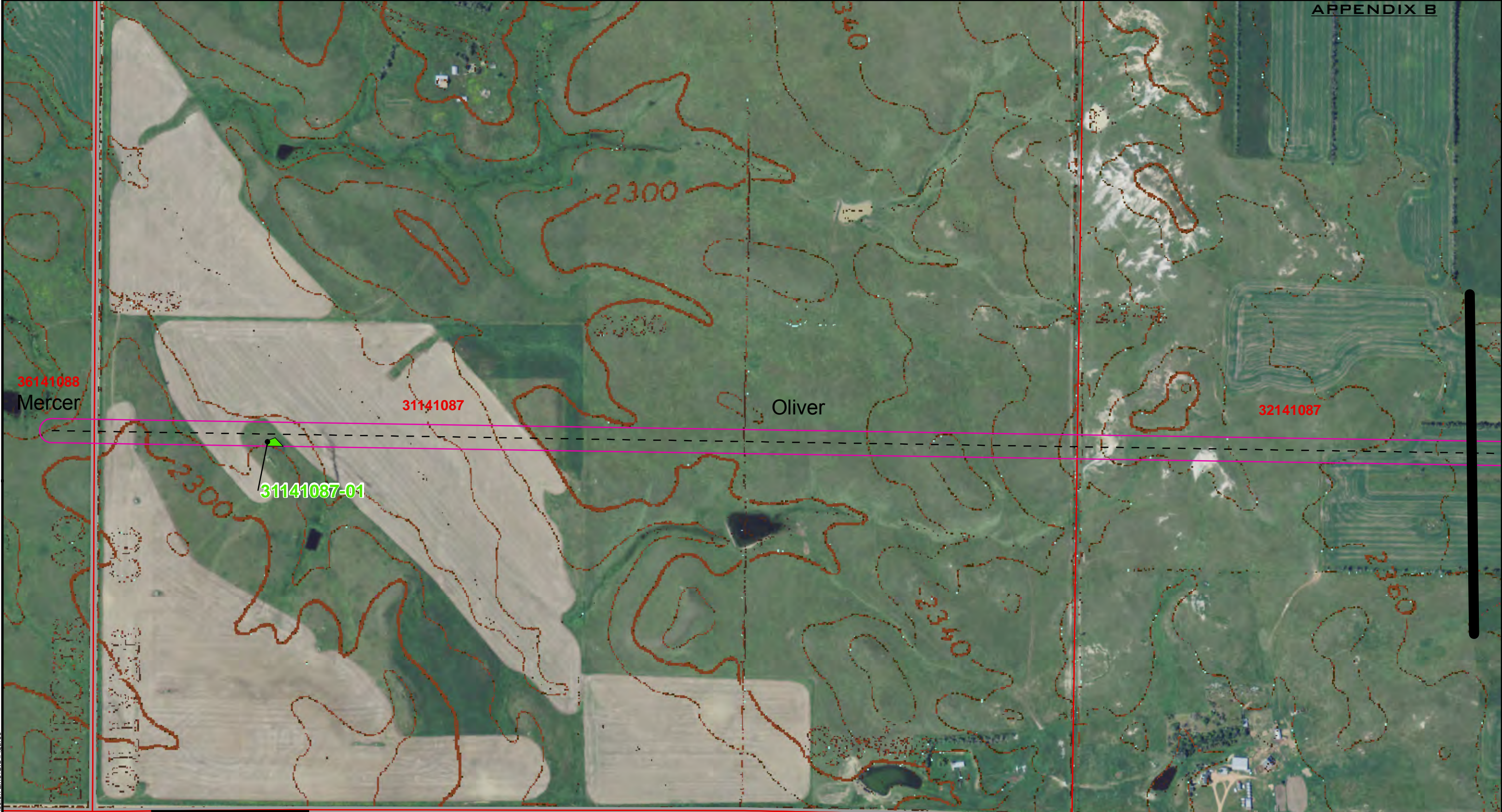
**Southwest Oliver 230_kV
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**FIGURE 1-6
Wetland and Waterbody
Aerial & Topography Map**





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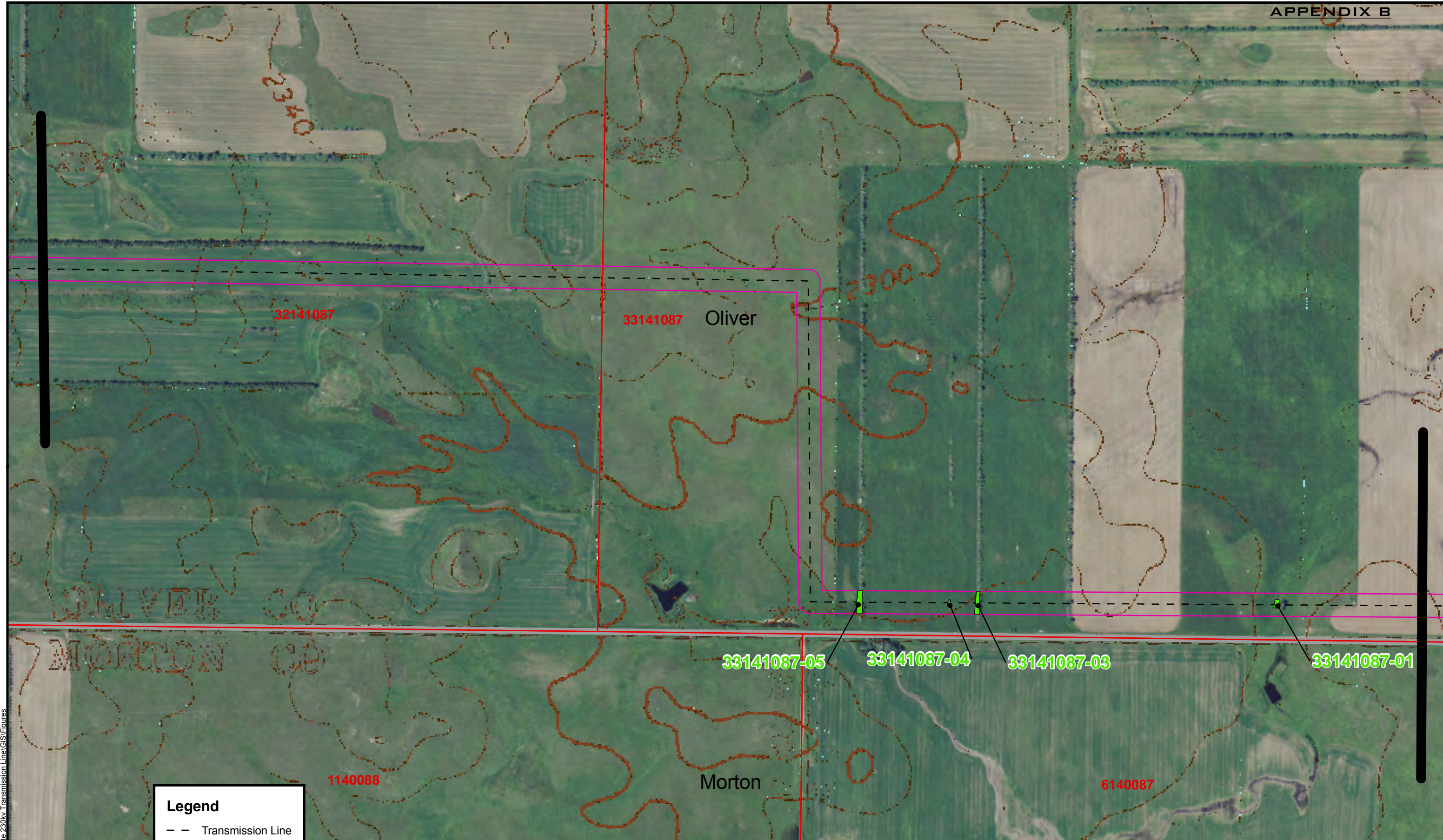

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Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin

**Southwest Oliver 230_kV
Transmission Line Project
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**FIGURE 2-1
Trees and Shrubs
Aerial & Topography Map**



Legend

- Transmission Line
- Survey Corridor
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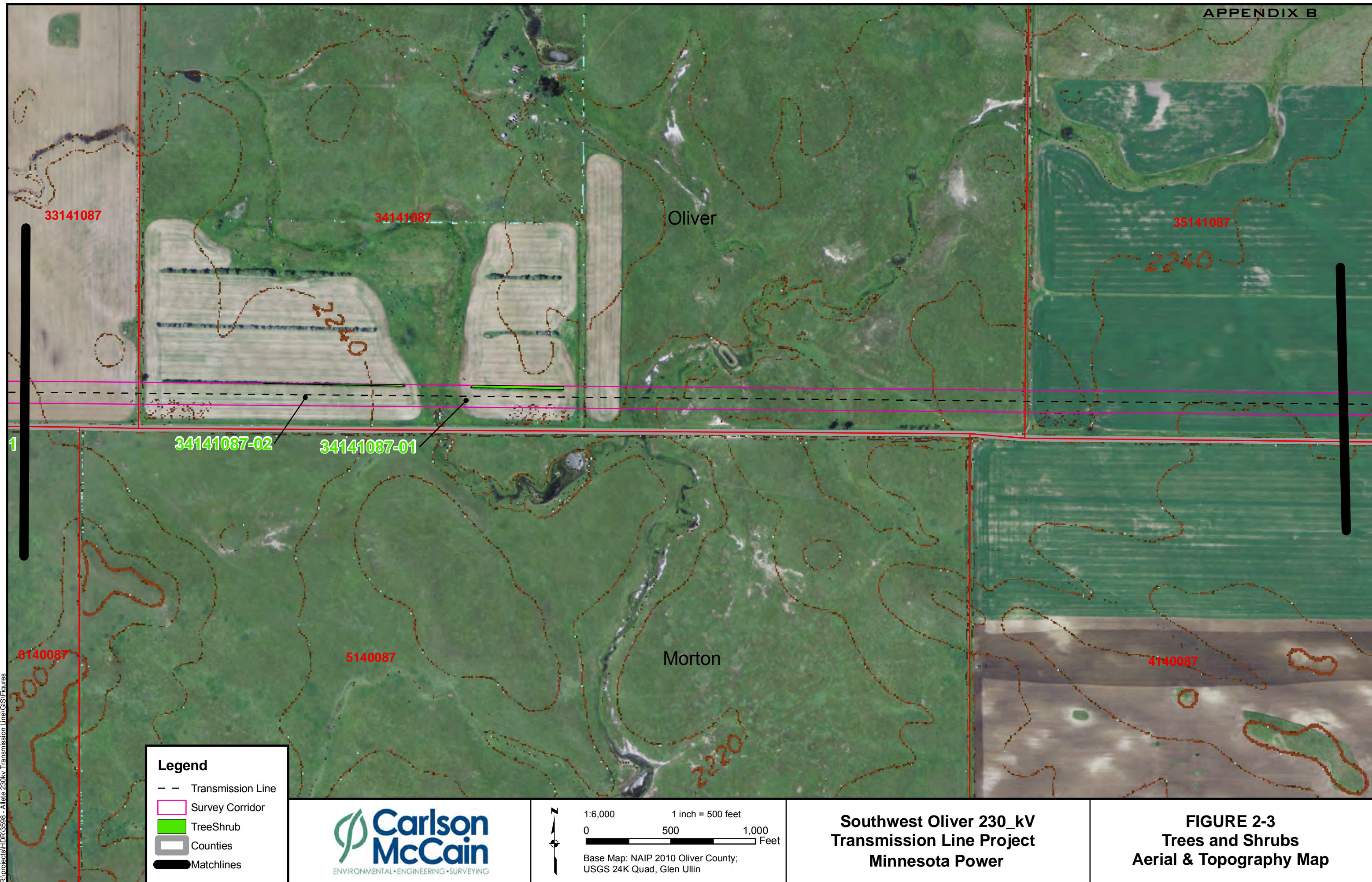
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Base Map: NAIP 2010 Oliver County;
USGS 24K Quad, Glen Ullin

**Southwest Oliver 230_kV
Transmission Line Project
Minnesota Power**

**FIGURE 2-2
Trees and Shrubs
Aerial & Topography Map**

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Legend

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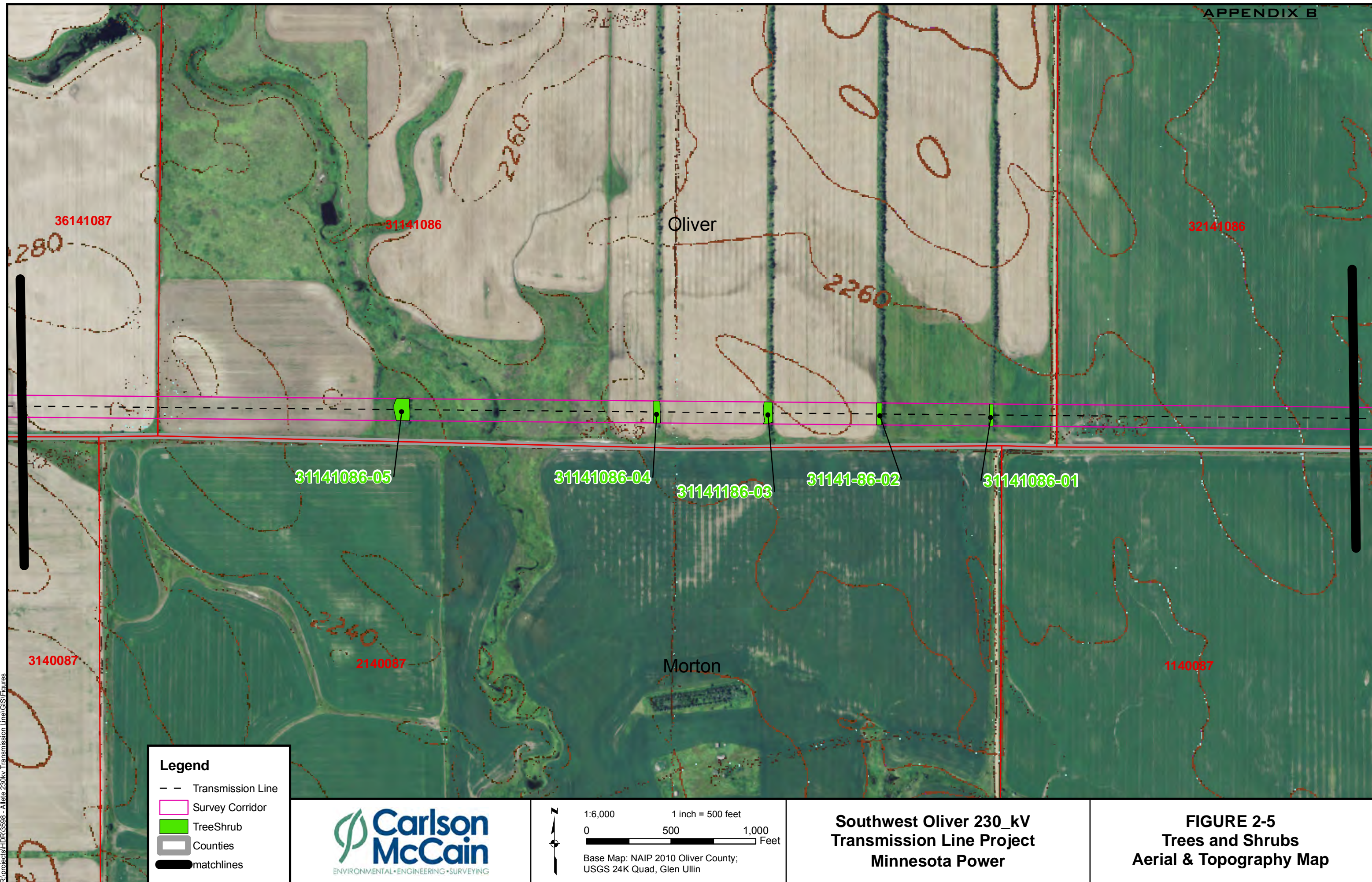
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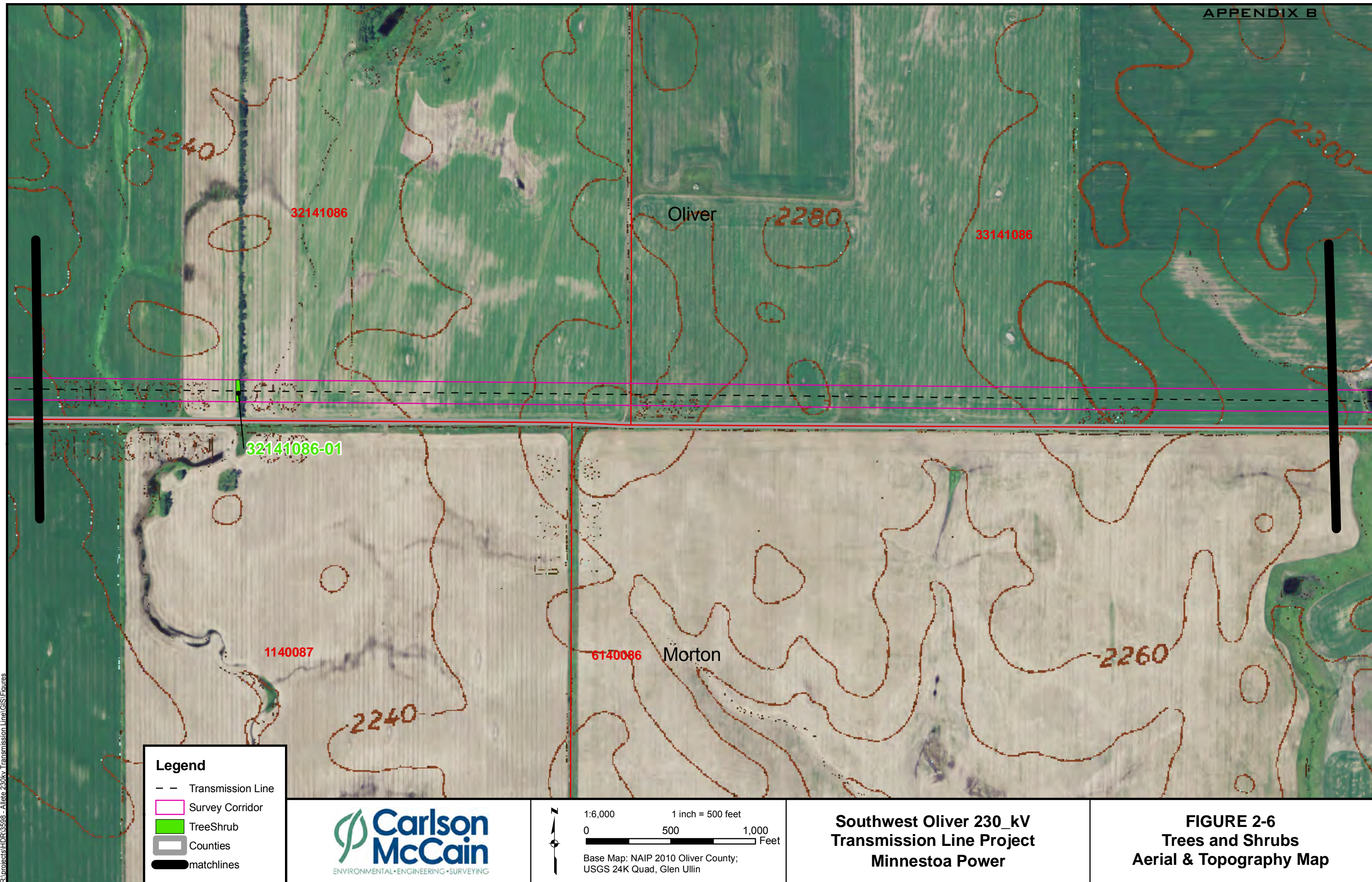
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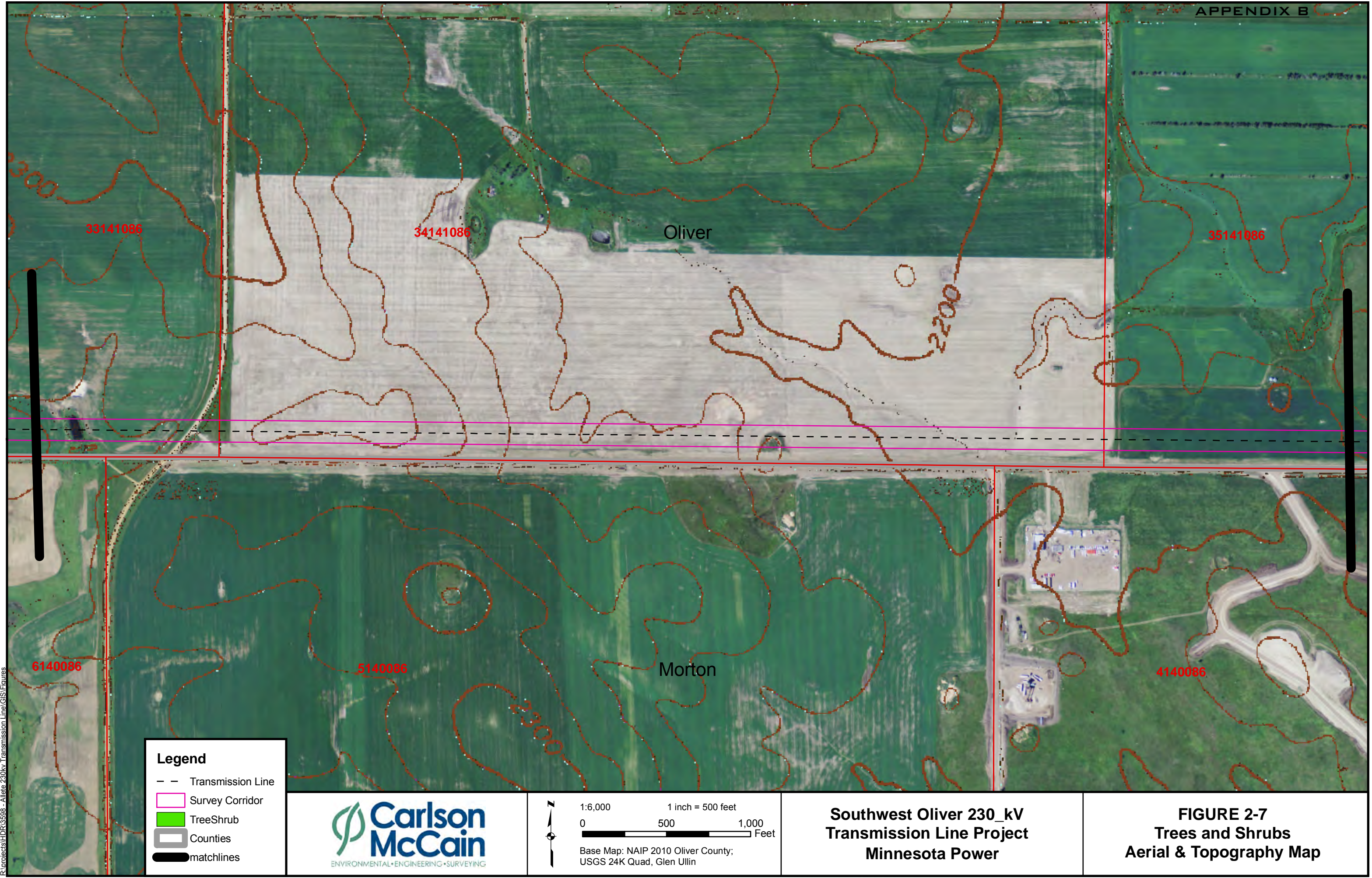
**Southwest Oliver 230_kV
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**FIGURE 2-4
Trees and Shrubs
Aerial & Topography Map**

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Legend

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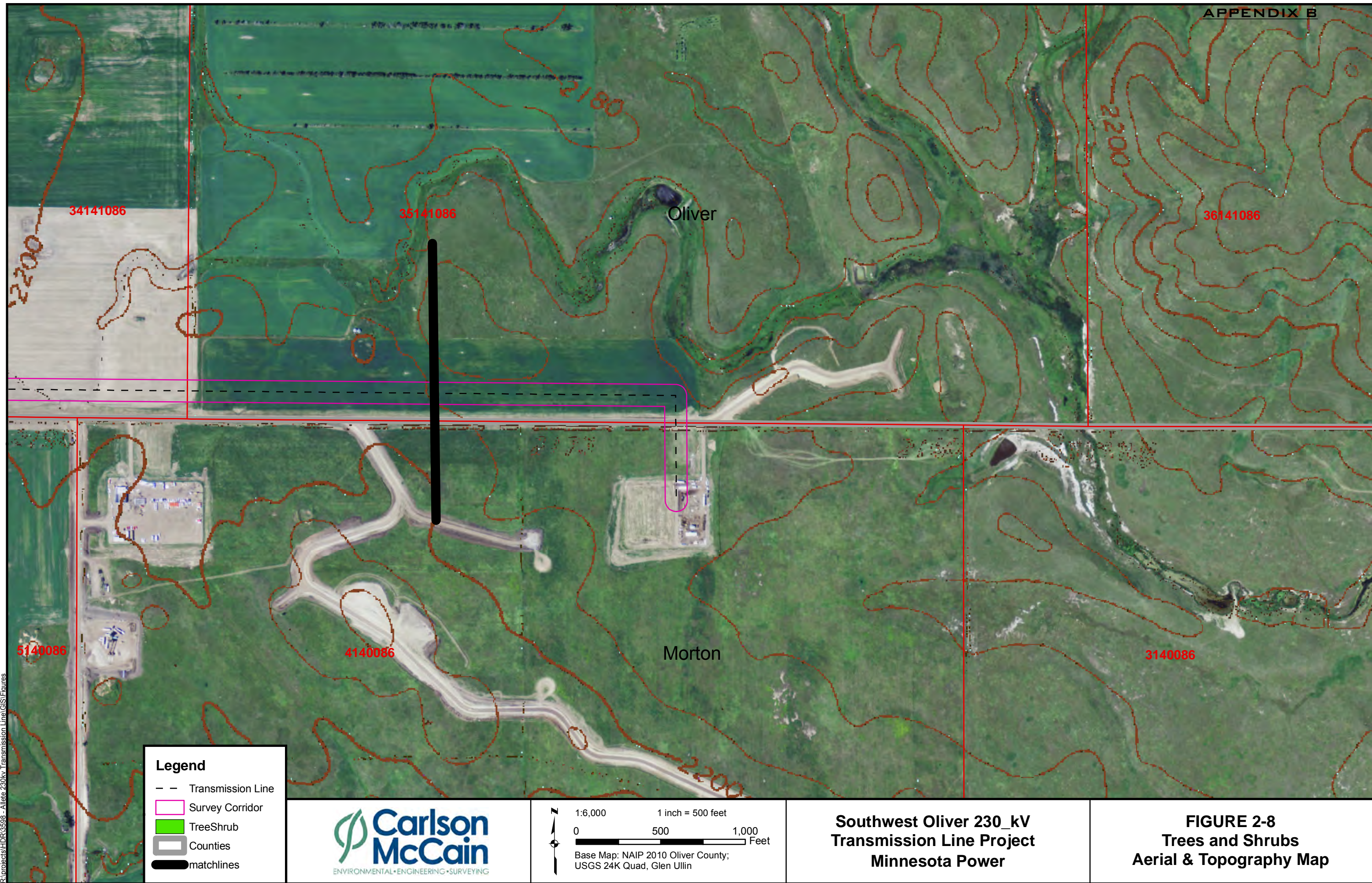
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 Transmission Line Project
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**FIGURE 2-7
 Trees and Shrubs
 Aerial & Topography Map**

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Appendix B
USACE Wetland Determination Data Forms

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 10/25/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 33141086 wet 1
 Investigator(s): Miranda Meehan, John Snyder Section, Township, Range: 33, 141, 086
 Landform (hillslope, terrace, etc.): depression/stream Local relief (concave, convex, none): concave Slope (%): ≤1
 Subregion (LRR): E Lat: 46.981588 Long: -101.577427 Datum: NAD 83
 Soil Map Unit Name: Morton silt loam, 3 to 6 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Remarks: old stock dam			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: <u>Total % Cover of:</u> <u>Multiply by:</u> OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: _____)				
1. <u>Spartina pectinata</u>	<u>80</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: _____ 1 – Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 – Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Typha latifolia</u>	<u>10</u>	<u>No</u>	<u>OBL</u>	
3. <u>Rumex crispus</u>	<u>2</u>	<u>No</u>	<u>FACW</u>	
4. <u>Agropyron repens</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
5. <u>Hordeum jubatum</u>	<u>3</u>	<u>No</u>	<u>FACW</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			= Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:				

APPENDIX B

SOIL

Sampling Point: 33141086 wet 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-20	10YR 2/1	85	7.5YR 4/6	15	_____	_____	Cly	_____
20-25	2.5Y 3/1	90	7.5YR 4/6	10	_____	_____	Cly	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- | |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> High Plains Depressions (F16) |
| (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF 12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input checked="" type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input checked="" type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input checked="" type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| (where tilled) |
| <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 12

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 10/25/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 33141086 up 1
 Investigator(s): Miranda Meehan, John Snyder Section, Township, Range: 33, 141, 086
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): E Lat: 46.981692 Long: -101.577046 Datum: NAD 83
 Soil Map Unit Name: Morton silt loam, 3 to 6 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: sunflower field		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
		= Total Cover		Prevalence Index worksheet: <u>Total % Cover of:</u> <u>Multiply by:</u> OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot Size: _____) 1. <u>Sunflower</u> <u>45</u> <u>Yes</u> <u>UPL</u> 2. <u>wheat</u> <u>5</u> <u>No</u> <u>UPL</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
Woody Vine Stratum (Plot Size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Hydrophytic Vegetation Indicators: _____ 1 – Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 – Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks: upland				

APPENDIX B

SOIL

Sampling Point: 33141086 up 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-12	10YR 3/2	_____	_____	_____	_____	_____	Fn Sy Lm	_____
12-18	10YR 4/3	_____	_____	_____	_____	_____	Fn Sy Lm	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- (where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 32141086 wet 1
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 32, 141, 086
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): ≤1
 Subregion (LRR): E Lat: 46.981529 Long: -101.603625 Datum: NAD 83
 Soil Map Unit Name: Belfield-Daglum silt loams, 0 to 2 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: <u>Total % Cover of:</u> <u>Multiply by:</u> OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: _____)				
1. <u>Typha latifolia</u>	<u>50</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Calamagrostis stricta</u>	<u>20</u>	<u>No</u>	<u>OBL</u>	
3. <u>Hordeum jubatum</u>	<u>10</u>	<u>No</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: _____ 1 – Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 – Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			= Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <u>20</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 32141086 wet 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-10	10YR 2/1	98	10YR 5/6	2	_____	_____	Cly Lm	_____
10-20	10YR 4/2	_____	_____	_____	_____	_____	Cly Lm	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input checked="" type="checkbox"/> Algal Mat or Crust (B4) | <input checked="" type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- (where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 2

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 32141086 up 1
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 32, 141, 086
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 1
 Subregion (LRR): E Lat: 46.981532 Long: -101.603186 Datum: NAD 83
 Soil Map Unit Name: Belfield-Daglum silt loams, 0 to 2 percent slopes NWI classification:
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: <u>Total % Cover of:</u> <u>Multiply by:</u> OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot Size: _____) 1. <u>Setaria glauca</u> <u>80</u> <u>Yes</u> <u>FACU</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
Woody Vine Stratum (Plot Size: _____) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u>				
Hydrophytic Vegetation Indicators: _____ 1 – Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 – Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 32141086 up 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-8	10 YR 4/1	_____	_____	_____	_____	_____	Sy Lm	_____
8-18	10 YR 4/3	_____	_____	_____	_____	_____	Sy Lm	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3) (where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 10/25/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 31141086 wet 1
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 31, 141, 086
 Landform (hillslope, terrace, etc.): plane Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): E Lat: 46.981598 Long: -101.618091 Datum: NAD 83
 Soil Map Unit Name: Regent-Janesburg silty clay loams, 0 to 3 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Remarks:			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: <u>Total % Cover of:</u> <u>Multiply by:</u> OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: _____)				
1. <u>Calamagrostis stricta</u>	<u>80</u>	<u>Yes</u>	<u>OBL</u>	
2. <u>Hordeum jubatum</u>	<u>15</u>	<u>No</u>	<u>FACW</u>	
3. <u>Rumex crispus</u>	<u>3</u>	<u>No</u>	<u>FACW</u>	
4. <u>Typha latifolia</u>	<u>2</u>	<u>No</u>	<u>OBL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: _____ 1 – Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 – Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			= Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 31141086 wet 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-12	10 YR 2/1	_____	_____	_____	_____	_____	Cly	_____
12-18	2.5 Y 4/1	_____	_____	_____	_____	_____	Cly	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input checked="" type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> High Plains Depressions (F16) |
| (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF 12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input checked="" type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| (where tilled) |
| <input type="checkbox"/> Crayfish Burrows (C8) |
| <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 10/25/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 31141086 up 1
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 31141086
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): ≤1
 Subregion (LRR): E Lat: 46.981677 Long: -101.620443 Datum: NAD 83
 Soil Map Unit Name: Morton silt loam, 3 to 6 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: <u>Total % Cover of:</u> _____ <u>Multiply by:</u> _____ OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: _____ 1 – Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 – Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot Size: _____)				
1. <u>Bromus inermis</u>	<u>30</u>	<u>No</u>	<u>UPL</u>	
2. <u>Poa pratensis</u>	<u>70</u>	<u>Yes</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	Remarks: <u>Upland - field edge</u>
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				

APPENDIX B

SOIL

Sampling Point: 31141086 up 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-10	10 YR 3/2	_____	_____	_____	_____	_____	Lm	_____
10-18	10 YR 4/3	_____	_____	_____	_____	_____	Lm	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3) (where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 31141086 wet 2
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 31, 141, 086
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 4
 Subregion (LRR): E Lat: 46.981633 Long: -101.629571 Datum: NAD 83
 Soil Map Unit Name: Rhoades-Daglum complex, 0 to 9 percent slopes NWI classification:
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: riparian wetland		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A) Total Number of Dominant Species Across All Strata: <u> </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A/B)
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u> </u> = Total Cover		Prevalence Index worksheet: <u>Total % Cover of:</u> <u> </u> <u>Multiply by:</u> <u> </u> OBL species <u> </u> x1 = <u> </u> FACW species <u> </u> x2 = <u> </u> FAC species <u> </u> x3 = <u> </u> FACU species <u> </u> x4 = <u> </u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
<u>Sapling/Shrub Stratum</u> (Plot Size: <u> </u>)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u> </u> = Total Cover		
<u>Herb Stratum</u> (Plot Size: <u> </u>)				
1. <u>Spartina pectinata</u>	<u>75</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Typha angustifolia</u>	<u>10</u>	<u>No</u>	<u>OBL</u>	
3. <u>Agropyron repens</u>	<u>15</u>	<u>No</u>	<u>FAC</u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Indicators: <u>X</u> 1 – Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 – Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u>100</u> = Total Cover		
<u>Woody Vine Stratum</u> (Plot Size: <u> </u>)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u> </u> = Total Cover		
% Bare Ground in Herb Stratum <u> </u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 31141086 wet 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-8	10 YR 2/1	98	5 YR 4/6	2	_____	_____	Cly Lm	_____
8-12	10 YR 4/1	100	_____	_____	_____	_____	Si Cly Lm	_____
12-18	10 YR 4/1	80	10 YR 4/6	20	_____	_____	Si Cly Lm	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- | |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> High Plains Depressions (F16) |
| (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF 12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| (where tilled) |
| <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |

Field Observations:

Surface Water Present?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches):
Water Table Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches):

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 31141086 up 2
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 31141086
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): E Lat: 46.981666 Long: -101.629372 Datum: NAD 83
 Soil Map Unit Name: Rhoades-Daglum complex, 0 to 9 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
		= Total Cover		Prevalence Index worksheet: <u>Total % Cover of:</u> <u>Multiply by:</u> OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
		= Total Cover		
Herb Stratum (Plot Size: _____)				
1. <u>Bromus inermis</u>	<u>50</u>	<u>Yes</u>	<u>UPL</u>	
2. <u>Poa pratensis</u>	<u>40</u>	<u>No</u>	<u>FACU</u>	
3. <u>Medicago sativa</u>	<u>10</u>	<u>NO</u>	<u>UPL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
		= Total Cover		
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
		= Total Cover		
% Bare Ground in Herb Stratum _____				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 31141086 up 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-10	10 YR 3/2	_____	_____	_____	_____	_____	Lm	_____
10-15	10 YR 4/3	_____	_____	_____	_____	_____	Lm	_____
15-20	10 YR 5/4	_____	_____	_____	_____	_____	Cly Lm	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3) (where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 36141087 wet 1
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 36141087
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): E Lat: 46.981645 Long: -101.653027 Datum: NAD 83
 Soil Map Unit Name: Belfield-Daglum silt loams, 2 to 6 percent slopes NWI classification:
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: riparian wetland			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A) Total Number of Dominant Species Across All Strata: <u> </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A/B)
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
			= Total Cover	Prevalence Index worksheet: <u>Total % Cover of:</u> <u> </u> <u>Multiply by:</u> <u> </u> OBL species <u> </u> x1 = <u> </u> FACW species <u> </u> x2 = <u> </u> FAC species <u> </u> x3 = <u> </u> FACU species <u> </u> x4 = <u> </u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Sapling/Shrub Stratum (Plot Size:)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
			= Total Cover	
Herb Stratum (Plot Size:)				Hydrophytic Vegetation Indicators: <u> </u> 1 – Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 – Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Spartina pectinata</u>	<u>15</u>	<u>No</u>	<u>FACW</u>	
2. <u>Phalaris arundinacea</u>	<u>85</u>	<u>Yes</u>	<u>FACW+</u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
			= Total Cover	
Woody Vine Stratum (Plot Size:)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
			= Total Cover	
% Bare Ground in Herb Stratum <u> </u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 36141087 wet 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-12	10 YR 2/1	98	7.5 YR 4/6	2	_____	_____	Cly Lm	_____
12-22	2.5 Y 4/2	95	7.5 YR 5/8	5	_____	_____	Cly Lm	_____
22-30	2.5 Y 5/3	80	7.5 YR 5/8	20	_____	_____	Cly	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input checked="" type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input checked="" type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- (where tilled)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): _____

Water Table Present? Yes ☒ No ☐ Depth (inches): 24

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 4

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 36141087 up 1
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 36141087
 Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): ≤1
 Subregion (LRR): E Lat: 46.981691 Long: -101.652841 Datum: NAD 83
 Soil Map Unit Name: Belfield-Daglum silt loams, 2 to 6 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
		= Total Cover		Prevalence Index worksheet: <u>Total % Cover of:</u> _____ <u>Multiply by:</u> _____ OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: _____ 1 – Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 – Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
		= Total Cover		
Herb Stratum (Plot Size: _____)				
1. <u>Bromus inermis</u>	<u>70</u>	<u>Yes</u>	<u>UPL</u>	
2. <u>Poa pratensis</u>	<u>30</u>	<u>No</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
10. _____	_____	_____	_____	
		= Total Cover		
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
		= Total Cover		
% Bare Ground in Herb Stratum _____				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 36141087 up 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-15	10 YR 3/2	_____	_____	_____	_____	_____	Si Lm	_____
15-18	2.5 Y 5/6	_____	_____	_____	_____	_____	Cly Lm	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3) (where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 34141087 wet 1
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 34, 141, 087
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): E Lat: 46.981623 Long: -101.689274 Datum: NAD 83
 Soil Map Unit Name: Straw loam, 0 to 2 percent slopes NWI classification:
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Remarks: riparian wetland			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A) Total Number of Dominant Species Across All Strata: <u> </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A/B)
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
			= Total Cover	Prevalence Index worksheet: <u>Total % Cover of:</u> <u> </u> <u>Multiply by:</u> <u> </u> OBL species <u> </u> x1 = <u> </u> FACW species <u> </u> x2 = <u> </u> FAC species <u> </u> x3 = <u> </u> FACU species <u> </u> x4 = <u> </u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Sapling/Shrub Stratum (Plot Size:)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
			= Total Cover	
Herb Stratum (Plot Size:)				Hydrophytic Vegetation Indicators: <u> </u> 1 – Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 – Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Spartina pectinata</u>	<u>87</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Agropyron trachycaulum</u>	<u>10</u>	<u>NO</u>	<u>FACU</u>	
3. <u>Eleocharis compressa</u>	<u>3</u>	<u>No</u>	<u>FACW</u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
			= Total Cover	
Woody Vine Stratum (Plot Size:)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
			= Total Cover	
% Bare Ground in Herb Stratum <u> </u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 34141087 wet 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-8	10 YR 2/1	97	10 YR 3/3	3	_____	_____	Cly Lm	_____
8-18	10 YR 2/1	73	10 YR 4/3	25	_____	_____	FnSiCILm	_____
18+	10YR2/1	_____	7.5 YR 5/8	3	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- | |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> High Plains Depressions (F16) |
| (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF 12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| (where tilled) |
| <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |

Field Observations:

Surface Water Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches): 12
Water Table Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches): 1

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 34141087 up 1
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 34141087
 Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): ≤1
 Subregion (LRR): E Lat: 46.981592 Long: -101.689489 Datum: NAD 83
 Soil Map Unit Name: Straw loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: upland		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
		= Total Cover		Prevalence Index worksheet: <u>Total % Cover of:</u> <u>Multiply by:</u> OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
		= Total Cover		
Herb Stratum (Plot Size: _____)				
1. <u>Agropyron smithii</u>	<u>28</u>	<u>NO</u>	<u>FACU</u>	
2. <u>Poa pratensis</u>	<u>68</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Symphoricarpos occidentalis</u>	<u>3</u>	<u>No</u>	<u>UPL</u>	
4. <u>Grindelia squarrosa</u>	<u>1</u>	<u>No</u>	<u>UPL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
		= Total Cover		
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
		= Total Cover		
% Bare Ground in Herb Stratum _____				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 34141087 up 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-18	10YR 3/2				C	M	Lm	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|---|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3) (where tilled)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 34141087 wet 2
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 34, 141, 087
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): ≤1
 Subregion (LRR): E Lat: 46.981645 Long: -101.693452 Datum: NAD 83
 Soil Map Unit Name: Belfield-Daglum silty clay loams, 0 to 2 percent slopes NWI classification:
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Remarks: riparian wetland			

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A) Total Number of Dominant Species Across All Strata: <u> </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A/B)
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u> </u> = Total Cover		Prevalence Index worksheet: <u>Total % Cover of:</u> <u> </u> <u>Multiply by:</u> <u> </u> OBL species <u> </u> x1 = <u> </u> FACW species <u> </u> x2 = <u> </u> FAC species <u> </u> x3 = <u> </u> FACU species <u> </u> x4 = <u> </u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
<u>Sapling/Shrub Stratum</u> (Plot Size: <u> </u>)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Indicators: <u> </u> 1 – Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 – Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u> </u> = Total Cover		
<u>Woody Vine Stratum</u> (Plot Size: <u> </u>)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
		<u> </u> = Total Cover		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
% Bare Ground in Herb Stratum <u> </u>				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 34141087 wet 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-6	10 YR 2/1	_____	_____	_____	_____	_____	SiClYLn	_____
6-28	2.5 Y 4/2	_____	_____	_____	_____	_____	SiClYLn	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> High Plains Depressions (F16) |
| (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF 12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|---|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input checked="" type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- | |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| (where tilled) |
| <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |

Field Observations:

Surface Water Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches): 1
Water Table Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 34141087 up 2
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 34141087
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%):
 Subregion (LRR): E Lat: 46.981742 Long: -101.693020 Datum: NAD 83
 Soil Map Unit Name: Straw loam, 0 to 2 percent slopes NWI classification:
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: plowed field		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A) Total Number of Dominant Species Across All Strata: <u> </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A/B)
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
		= Total Cover		Prevalence Index worksheet: <u>Total % Cover of:</u> <u> </u> <u>Multiply by:</u> <u> </u> OBL species <u> </u> x1 = <u> </u> FACW species <u> </u> x2 = <u> </u> FAC species <u> </u> x3 = <u> </u> FACU species <u> </u> x4 = <u> </u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Sapling/Shrub Stratum (Plot Size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> <u> </u> = Total Cover				
Herb Stratum (Plot Size: <u> </u>) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> 9. <u> </u> 10. <u> </u> <u> </u> = Total Cover				
Woody Vine Stratum (Plot Size: <u> </u>) 1. <u> </u> 2. <u> </u> <u> </u> = Total Cover				
% Bare Ground in Herb Stratum <u>100</u>				
Hydrophytic Vegetation Indicators: <u> </u> 1 – Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 – Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 34141087 up 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-10	10YR 3/2	_____	_____	_____	_____	_____	SiLm	_____
10-18	10 YR 4/2	_____	_____	_____	_____	_____	SiLm	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)
- (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present?
(includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 33141087 wet 1
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 33141087
 Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR): E Lat: 46.981628 Long: -101.706748 Datum: NAD 83
 Soil Map Unit Name: Grail silty clay loam, 0 to 2 percent slopes NWI classification:
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: riparian wetland		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A) Total Number of Dominant Species Across All Strata: <u> </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A/B)
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
		= Total Cover		Prevalence Index worksheet: <u>Total % Cover of:</u> <u> </u> <u>Multiply by:</u> <u> </u> OBL species <u> </u> x1 = <u> </u> FACW species <u> </u> x2 = <u> </u> FAC species <u> </u> x3 = <u> </u> FACU species <u> </u> x4 = <u> </u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Sapling/Shrub Stratum (Plot Size:) 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> = Total Cover				
Herb Stratum (Plot Size:) 1. <u>Spartina pectinata</u> <u>60</u> <u>yes</u> <u>FACW</u> 2. <u>Rumex crispus</u> <u>5</u> <u>no</u> <u>FACW</u> 3. <u>Carex lanuginosa</u> <u>25</u> <u>no</u> <u>OBL</u> 4. <u>Phalaris arundinacea</u> <u>10</u> <u>no</u> <u>FACW+</u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> 9. <u> </u> 10. <u> </u> <u>100</u> = Total Cover				
Woody Vine Stratum (Plot Size:) 1. <u> </u> 2. <u> </u> = Total Cover				
% Bare Ground in Herb Stratum <u> </u>				
Hydrophytic Vegetation Indicators: <u> </u> 1 – Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 – Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 33141087 wet 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-18	10YR2/1	80	7.5YR 4/6	20			ClyLm	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input checked="" type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input checked="" type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- (where tilled)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): _____

Water Table Present? Yes ☒ No ☐ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: 11 Mile Transmission Line City/County: Oliver Sampling Date: 11/04/11
 Applicant/Owner: Allete Clean Energy State: ND Sampling Point: 33141087 up 1
 Investigator(s): Miranda Meehan, Chad Tucker Section, Township, Range: 33141087
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): ≤1
 Subregion (LRR): E Lat: 46.981633 Long: -101.706522 Datum: NAD 83
 Soil Map Unit Name: Grail silty clay loam, 0 to 2 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:		

VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	Prevalence Index worksheet: <u>Total % Cover of:</u> _____ <u>Multiply by:</u> _____ OBL species _____ x1 = _____ FACW species _____ x2 = _____ FAC species _____ x3 = _____ FACU species _____ x4 = _____ UPL species _____ x5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
Herb Stratum (Plot Size: _____)				
1. <u>Bromus inermis</u>	<u>60</u>	<u>yes</u>	<u>UPL</u>	
2. <u>Poa pratensis</u>	<u>30</u>	<u>no</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: _____ 1 – Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 – Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. <u>Conyza canadensis</u>	<u>2</u>	<u>no</u>	<u>FACU</u>	
4. <u>Artemisia frigida</u>	<u>3</u>	<u>no</u>	<u>NL</u>	
5. <u>Aster ericoides</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			= Total Cover	
Woody Vine Stratum (Plot Size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum _____				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks:				

APPENDIX B

SOIL

Sampling Point: 33141087 up 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-10	10 YR 3/1	_____	_____	_____	_____	_____	Lm	_____
10-18	10 YR 4/3	_____	_____	_____	_____	_____	SiLm	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (**LRR I, J**)
- ☐ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ☐ Dark Surface (S7) (**LRR G**)
- ☐ High Plains Depressions (F16)
- (**LRR H outside of MLRA 72 & 73**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF 12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soils Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C
Tree and Shrub Inventory Forms

TREE COUNT: Allete Transmission Line				
Sampled by: <i>MM, JS</i>		Date: <i>10/25/11</i>		
Location / Site ID:				
Woodland Type (circle):	Native ¹	<u>Planted²</u>		
SPECIES	Invasive Species? ³	# (DBH 1-2")	# (DBH >2")	TOTAL NUMBER
<i>34141087-01</i>				
<i>Fra gen</i>		<i>5</i>	<i>37</i>	<i>42</i>
<i>34141087-02</i>				
<i>Fra gen</i>		<i>14</i>	<i>120</i>	<i>134</i>
<i>33141087-01 → Native by Stream</i>				
<i>Pop del</i>			<i>3</i>	<i>3</i>
<i>33141087-02</i>				
<i>Ulm pum</i>		<i>3</i>	<i>6</i>	<i>9</i>
<i>33141087-03</i>				
<i>Ulm pum</i>			<i>22</i>	<i>22</i>
<i>33141087-04</i>				
<i>Ulm pum</i>			<i>19</i>	<i>19</i>
<i>33141087-05</i>				
<i>Ulm pum</i>		<i>3</i>	<i>12</i>	<i>15</i>
<i>32141087-01</i>				
<i>Fra gen</i>			<i>2</i>	<i>2</i>
<i>31141087-01 → Native</i>				
<i>She arg (shrub det)</i>		<i>23</i>		<i>1265</i>

¹ Criteria for counting in native areas: trees DBH >1" and shrubs total count

² Criteria for counting in planted areas: total count

³ invasive includes species such as caragana, russian olive, buckthorn, siberian elm

TREE COUNT: Allete Transmission Line				
Sampled by: <i>MM, JS</i>		Date: <i>10/25/11</i>		
Location / Site ID:				
Woodland Type (circle):		Native ¹ <u>Planted²</u>		
SPECIES	Invasive Species? ³	# (DBH 1-2")	# (DBH >2")	TOTAL NUMBER
<i>32141086-01</i>				
<i>Car arb</i>		<i>9</i>		<i>9</i>
<i>Ulm ame</i>			<i>8</i>	<i>8</i>
<i>31141086-01</i>				
<i>Fra per</i>			<i>34</i>	<i>34</i>
<i>31141086-02</i>				
<i>Ulm pum</i>			<i>32</i>	<i>32</i>
<i>31141086-03</i>				
<i>Ulm ame</i>			<i>13</i>	<i>13</i>
<i>31141086-04</i>				
<i>Ulm pum</i>			<i>12</i>	<i>12</i>
<i>3141086-05</i>				
<i>Fra per</i>		<i>1</i>	<i>28</i>	<i>29</i>
<i>Pop del</i>			<i>3</i>	<i>3</i>
<i>Lilac</i>		<i>1</i>		<i>11</i>
<i>Pin ris</i>		<i>68</i>		<i>70</i>
<i>36141087-01</i>				
<i>Sal amy</i>			<i>6</i>	<i>6</i>

¹ Criteria for counting in native areas: trees DBH >1" and shrubs total count

² Criteria for counting in planted areas: total count

³ invasive includes species such as caragana, russian olive, buckthorn, siberian elm

Appendix D
Project Area Photographs



Photograph 1. Photograph of tree and shrub location 33141087-05 taken facing east. Multiple treerows and shelterbelts similar to this one are located within the Project Area.



Photograph 2. Photograph of wetland 33141087-w1 and waterbody 33141087-s1 taken facing north.



Photograph 3. Photograph of wetland 34141087-w2 and waterbody 34141087-s2 taken facing north.



Photograph 4. Photograph of wetland 34141087-w2 and waterbody 34141087-s1 taken facing north.



Photograph 5. Photograph of wetland 36141087-w1 and waterbody 36141087-s1 facing east. Photograph also includes Tree and shrub location 36141087-01.



Photograph 6. Photograph of wetland 31141086-w2 and waterbody 31141086-s1 taken facing north.



Photograph 7. Photograph of wetland 31141086-w and tree and shrub location 31141086-01 taken facing north.



Photograph 8. Photograph of waterbody 32141086-s2 and tree and shrub location 32141086-01 taken facing east.



Photograph 9. Photograph taken while facing east, looking down the east end of the Project Area. Crop fields such as this are common throughout the Project Area.



Photograph 10. Photograph of waterbody 34151086-s1 taken facing north on the east end of the Project Area.

Appendix E
Waterbody Data Sheets

Allego Line Project
Waterbody Data Sheet

FEATURE ID: <u>34141086-01</u>
WATERBODY NAME:

SURVEY DATE: <u>10/25/11</u>
INVESTIGATOR: <u>MM, JS</u>

FLOW CHARACTERISTICS
<input type="checkbox"/> EPHEMERAL <input checked="" type="checkbox"/> INTERMITTENT <input type="checkbox"/> PERENNIAL
CURRENT WATER WIDTH AT CROSSING: <u>2</u> FT
CURRENT WATER DEPTH AT CROSSING: <u>0.5</u> FT

SUBSTRATE	
<input type="checkbox"/> BEDROCK <input checked="" type="checkbox"/> GRAVEL <input type="checkbox"/> SAND <input type="checkbox"/> OTHER _____	<input checked="" type="checkbox"/> SILT <input type="checkbox"/> CLAY
<input checked="" type="checkbox"/> RUNS <input type="checkbox"/> POOLS <input type="checkbox"/> RIFFLES	

BANK CHARACTERISTICS	
LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: <u>5</u> FT	HEIGHT: <u>15</u> FT
SLOPE <input checked="" type="checkbox"/> 0-30° <input type="checkbox"/> 31-45° <input type="checkbox"/> 46-60° <input type="checkbox"/> 61-90°	SLOPE <input type="checkbox"/> 0-30° <input checked="" type="checkbox"/> 31-45° <input type="checkbox"/> 46-60° <input type="checkbox"/> 61-90°
WIDTH (HIGHEST BANK TO HIGHEST BANK): <u>150</u> FT	
EVIDENCE OF EROSION: <u>cropped through</u> <u>rill erosion</u>	
SCOUR POTENTIAL: <u>high since cropped</u> <u>through</u>	

RIPARIAN HABITAT
RIPARIAN VEGETATION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
RIPARIAN SPECIES PRESENT: <u>4br job, Run of, typha, Pan vir</u>
INVASIVES/NOXIOUS VEGETATION <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
IF YES, SPECIES PRESENT:
ADJACENT WETLAND <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
T & E SPECIES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA		
<input checked="" type="checkbox"/> CLEAR, NATURAL LINE IMPRESSED ON BANK <input checked="" type="checkbox"/> VEGETATION MATTED DOWN, BENT OR ABSENT <input type="checkbox"/> LEAF LITTER DISTURBED OR WASHED AWAY <input checked="" type="checkbox"/> DESTRUCTION OF TERRESTRIAL VEGETATION <input type="checkbox"/> ABRUPT CHANGE IN PLANT COMMUNITY	<input type="checkbox"/> CHANGES IN SOIL CHARACTER <input type="checkbox"/> SEDIMENT DEPOSITION <input type="checkbox"/> SEDIMENT SORTING <input type="checkbox"/> PRESENCE OF LITTER OR DEBRIS <input type="checkbox"/> PRESENCE OF WRACK LINE	<input type="checkbox"/> SHELVING <input type="checkbox"/> SCOUR <input type="checkbox"/> WATER STAINING <input type="checkbox"/> OTHER:

PHOTOGRAPHS	

Allete Line Project
Waterbody Data Sheet

FEATURE ID: 32141086 - 01

WATERBODY NAME:

SURVEY DATE:	10/25/11
INVESTIGATOR:	MM, JS

FLOW CHARACTERISTICS	
<input type="checkbox"/>	EPHEMERAL
<input type="checkbox"/>	INTERMITTENT
<input checked="" type="checkbox"/>	PERENNIAL
CURRENT WATER WIDTH AT CROSSING: 200 FT 80	
CURRENT WATER DEPTH AT CROSSING: 1 FT	

SUBSTRATE	
<input type="checkbox"/> BEDROCK	<input checked="" type="checkbox"/> SILT
<input type="checkbox"/> GRAVEL	<input type="checkbox"/> CLAY
<input type="checkbox"/> SAND	
<input type="checkbox"/> OTHER _____	
<hr/>	
<input checked="" type="checkbox"/> RUNS	
<input checked="" type="checkbox"/> POOLS	
<input checked="" type="checkbox"/> RIFFLES	

BANK CHARACTERISTICS	
LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 10 FT	HEIGHT: 1 FT
SLOPE <input checked="" type="checkbox"/> 0 - 30° <input type="checkbox"/> 31 - 45° <input type="checkbox"/> 46 - 60° <input type="checkbox"/> 61 - 90°	SLOPE <input checked="" type="checkbox"/> 0 - 30° <input type="checkbox"/> 31 - 45° <input type="checkbox"/> 46 - 60° <input type="checkbox"/> 61 - 90°
WIDTH (HIGHEST BANK TO HIGHEST BANK): 120 FT	
EVIDENCE OF EROSION: <i>cropped through rills</i>	
SCOUR POTENTIAL: <i>high cropped up rd through in areas</i>	

RIPARIAN HABITAT
RIPARIAN VEGETATION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
RIPARIAN SPECIES PRESENT: <i>Tuff, Cedar, River Birch, C. & G., Hawthorn</i>
INVASIVES/NOXIOUS VEGETATION <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
IF YES, SPECIES PRESENT:
ADJACENT WETLAND <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
T & E SPECIES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA		
<input checked="" type="checkbox"/> CLEAR, NATURAL LINE IMPRESSED ON BANK	<input type="checkbox"/> CHANGES IN SOIL CHARACTER	<input type="checkbox"/> SHELVING
<input checked="" type="checkbox"/> VEGETATION MATTED DOWN, BENT OR ABSENT	<input type="checkbox"/> SEDIMENT DEPOSITION	<input type="checkbox"/> SCOUR
<input type="checkbox"/> LEAF LITTER DISTURBED OR WASHED AWAY	<input type="checkbox"/> SEDIMENT SORTING	<input type="checkbox"/> WATER STAINING
<input type="checkbox"/> DESTRUCTION OF TERRESTRIAL VEGETATION	<input type="checkbox"/> PRESENCE OF LITTER OR DEBRIS	<input type="checkbox"/> OTHER:
<input checked="" type="checkbox"/> ABRUPT CHANGE IN PLANT COMMUNITY	<input type="checkbox"/> PRESENCE OF WRACK LINE	

PHOTOGRAPHS	

Allete Line Project
Waterbody Data Sheet

FEATURE ID: <u>32141086-02</u>
WATERBODY NAME:

SURVEY DATE: <u>10/25/11</u>
INVESTIGATOR: <u>MM, JS</u>

FLOW CHARACTERISTICS
<input type="checkbox"/> EPHEMERAL <input type="checkbox"/> INTERMITTENT <input checked="" type="checkbox"/> PERENNIAL
CURRENT WATER WIDTH AT CROSSING: <u>5</u> FT
CURRENT WATER DEPTH AT CROSSING: <u>0.5</u> FT

SUBSTRATE	
<input type="checkbox"/> BEDROCK <input type="checkbox"/> GRAVEL <input type="checkbox"/> SAND <input type="checkbox"/> OTHER _____	<input checked="" type="checkbox"/> SILT <input type="checkbox"/> CLAY
<input checked="" type="checkbox"/> RUNS <input type="checkbox"/> POOLS <input type="checkbox"/> RIFFLES	

BANK CHARACTERISTICS	
LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: <u>4</u> FT	HEIGHT: <u>6</u> FT
SLOPE <input checked="" type="checkbox"/> 0 - 30° <input type="checkbox"/> 31 - 45° <input type="checkbox"/> 46 - 60° <input type="checkbox"/> 61 - 90°	SLOPE <input checked="" type="checkbox"/> 0 - 30° <input type="checkbox"/> 31 - 45° <input type="checkbox"/> 46 - 60° <input type="checkbox"/> 61 - 90°
WIDTH (HIGHEST BANK TO HIGHEST BANK): <u>150</u> FT	
EVIDENCE OF EROSION: <u>none to little</u>	
SCOUR POTENTIAL: <u>high to catastrophic</u>	

RIPARIAN HABITAT
RIPARIAN VEGETATION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
RIPARIAN SPECIES PRESENT: <u>Betula nigra</u>
INVASIVES/NOXIOUS VEGETATION <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
IF YES, SPECIES PRESENT:
ADJACENT WETLAND <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
T & E SPECIES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA		
<input type="checkbox"/> CLEAR, NATURAL LINE IMPRESSED ON BANK <input checked="" type="checkbox"/> VEGETATION MATTED DOWN, BENT OR ABSENT <input type="checkbox"/> LEAF LITTER DISTURBED OR WASHED AWAY <input checked="" type="checkbox"/> DESTRUCTION OF TERRESTRIAL VEGETATION <input checked="" type="checkbox"/> ABRUPT CHANGE IN PLANT COMMUNITY	<input type="checkbox"/> CHANGES IN SOIL CHARACTER <input type="checkbox"/> SEDIMENT DEPOSITION <input type="checkbox"/> SEDIMENT SORTING <input type="checkbox"/> PRESENCE OF LITTER OR DEBRIS <input type="checkbox"/> PRESENCE OF WRACK LINE	<input type="checkbox"/> SHELVING <input type="checkbox"/> SCOUR <input type="checkbox"/> WATER STAINING <input type="checkbox"/> OTHER:

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Allete Line Project
Waterbody Data Sheet

FEATURE ID: <u>3141086-01</u>
WATERBODY NAME:

SURVEY DATE: <u>10/25/11</u>
INVESTIGATOR: <u>MM, JS</u>

FLOW CHARACTERISTICS
<input type="checkbox"/> EPHEMERAL <input type="checkbox"/> INTERMITTENT <input checked="" type="checkbox"/> PERENNIAL
CURRENT WATER WIDTH AT CROSSING: <u>90</u> FT
CURRENT WATER DEPTH AT CROSSING: <u>1</u> FT

SUBSTRATE
<input type="checkbox"/> BEDROCK <input type="checkbox"/> SILT <input type="checkbox"/> GRAVEL <input checked="" type="checkbox"/> CLAY <input type="checkbox"/> SAND <input type="checkbox"/> OTHER _____
<input checked="" type="checkbox"/> RUNS <input checked="" type="checkbox"/> POOLS <input checked="" type="checkbox"/> RIFFLES

BANK CHARACTERISTICS	
LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: <u>25</u> FT	HEIGHT: <u>15</u> FT
SLOPE <input type="checkbox"/> 0 - 30° <input checked="" type="checkbox"/> 31 - 45° <input type="checkbox"/> 46 - 60° <input type="checkbox"/> 61 - 90°	SLOPE <input checked="" type="checkbox"/> 0 - 30° <input type="checkbox"/> 31 - 45° <input type="checkbox"/> 46 - 60° <input type="checkbox"/> 61 - 90°
WIDTH (HIGHEST BANK TO HIGHEST BANK): <u>300</u> FT	
EVIDENCE OF EROSION: <u>none evident</u>	
SCOUR POTENTIAL: <u>low well vegetated</u>	

RIPARIAN HABITAT
RIPARIAN VEGETATION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
RIPARIAN SPECIES PRESENT: <u>Syn. Red, River, 4</u> <u>Black, Age, 100, 100, 100</u>
INVASIVES/NOXIOUS VEGETATION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
IF YES, SPECIES PRESENT: <u>Br. 100, 100, 100</u>
ADJACENT WETLAND <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
T & E SPECIES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA		
<input type="checkbox"/> CLEAR, NATURAL LINE IMPRESSED ON BANK <input checked="" type="checkbox"/> VEGETATION MATTED DOWN, BENT OR ABSENT <input type="checkbox"/> LEAF LITTER DISTURBED OR WASHED AWAY <input type="checkbox"/> DESTRUCTION OF TERRESTRIAL VEGETATION <input checked="" type="checkbox"/> ABRUPT CHANGE IN PLANT COMMUNITY	<input type="checkbox"/> CHANGES IN SOIL CHARACTER <input type="checkbox"/> SEDIMENT DEPOSITION <input type="checkbox"/> SEDIMENT SORTING <input type="checkbox"/> PRESENCE OF LITTER OR DEBRIS <input type="checkbox"/> PRESENCE OF WRACK LINE	<input type="checkbox"/> SHELIVING <input type="checkbox"/> SCOUR <input checked="" type="checkbox"/> WATER STAINING <input type="checkbox"/> OTHER:

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Allete Line Project
Waterbody Data Sheet

FEATURE ID: <u>30141087-01</u>
WATERBODY NAME:

SURVEY DATE: <u>10/25/11</u>
INVESTIGATOR:

FLOW CHARACTERISTICS
<input type="checkbox"/> EPHEMERAL <input checked="" type="checkbox"/> INTERMITTENT <input type="checkbox"/> PERENNIAL
CURRENT WATER WIDTH AT CROSSING: <u>0</u> FT
CURRENT WATER DEPTH AT CROSSING: <u>0</u> FT

SUBSTRATE	
<input type="checkbox"/> BEDROCK <input type="checkbox"/> GRAVEL <input type="checkbox"/> SAND <input type="checkbox"/> OTHER _____	<input checked="" type="checkbox"/> SILT <input type="checkbox"/> CLAY
<input type="checkbox"/> RUNS <input checked="" type="checkbox"/> POOLS <input checked="" type="checkbox"/> RIFFLES	

BANK CHARACTERISTICS	
LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: <u>30</u> FT	HEIGHT: <u>25</u> FT
SLOPE <input type="checkbox"/> 0 - 30° <input type="checkbox"/> 31 - 45° <input checked="" type="checkbox"/> 46 - 60° <input type="checkbox"/> 61 - 90°	SLOPE <input type="checkbox"/> 0 - 30° <input checked="" type="checkbox"/> 31 - 45° <input type="checkbox"/> 46 - 60° <input type="checkbox"/> 61 - 90°
WIDTH (HIGHEST BANK TO HIGHEST BANK): <u>25</u> FT	
EVIDENCE OF EROSION: <u>None</u>	
SCOUR POTENTIAL: <u>low - well vegetated</u>	

RIPARIAN HABITAT
RIPARIAN VEGETATION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
RIPARIAN SPECIES PRESENT: <u>Phacelia</u>
INVASIVES/NOXIOUS VEGETATION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
IF YES, SPECIES PRESENT: <u>Phacelia, Ceanothus</u>
ADJACENT WETLAND <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
T & E SPECIES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA		
<input type="checkbox"/> CLEAR, NATURAL LINE IMPRESSED ON BANK <input checked="" type="checkbox"/> VEGETATION MATTED DOWN, BENT OR ABSENT <input type="checkbox"/> LEAF LITTER DISTURBED OR WASHED AWAY <input type="checkbox"/> DESTRUCTION OF TERRESTRIAL VEGETATION <input checked="" type="checkbox"/> ABRUPT CHANGE IN PLANT COMMUNITY	<input type="checkbox"/> CHANGES IN SOIL CHARACTER <input type="checkbox"/> SEDIMENT DEPOSITION <input type="checkbox"/> SEDIMENT SORTING <input type="checkbox"/> PRESENCE OF LITTER OR DEBRIS <input type="checkbox"/> PRESENCE OF WRACK LINE	<input type="checkbox"/> SHELVING <input type="checkbox"/> SCOUR <input type="checkbox"/> WATER STAINING <input type="checkbox"/> OTHER:

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Allete Line Project
Waterbody Data Sheet

FEATURE ID: <u>34141087-01</u>
WATERBODY NAME:

SURVEY DATE: <u>10/25/11</u>
INVESTIGATOR: <u>MM, JS</u>

FLOW CHARACTERISTICS
<input type="checkbox"/> EPHEMERAL <input type="checkbox"/> INTERMITTENT <input checked="" type="checkbox"/> PERENNIAL
CURRENT WATER WIDTH AT CROSSING: <u>8</u> FT
CURRENT WATER DEPTH AT CROSSING: <u>2</u> FT

SUBSTRATE
<input type="checkbox"/> BEDROCK <input type="checkbox"/> SILT <input type="checkbox"/> GRAVEL <input checked="" type="checkbox"/> CLAY <input type="checkbox"/> SAND <input type="checkbox"/> OTHER _____
<input checked="" type="checkbox"/> RUNS
<input checked="" type="checkbox"/> POOLS
<input checked="" type="checkbox"/> RIFFLES

BANK CHARACTERISTICS	
LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: <u>3</u> FT	HEIGHT: <u>6</u> FT
SLOPE <input checked="" type="checkbox"/> 0-30° <input type="checkbox"/> 31-45° <input type="checkbox"/> 46-60° <input type="checkbox"/> 61-90°	SLOPE <input checked="" type="checkbox"/> 0-30° <input type="checkbox"/> 31-45° <input type="checkbox"/> 46-60° <input type="checkbox"/> 61-90°
WIDTH (HIGHEST BANK TO HIGHEST BANK): <u>90</u> FT	
EVIDENCE OF EROSION: <u>None</u>	
SCOUR POTENTIAL: <u>None</u> Low - w/ glp vegetation	

RIPARIAN HABITAT
RIPARIAN VEGETATION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
RIPARIAN SPECIES PRESENT: <u>Sp. pec, spp. 63</u> <u>Scirpus, Eleocharis</u>
INVASIVES/NOXIOUS VEGETATION <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
IF YES, SPECIES PRESENT:
ADJACENT WETLAND <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
T & E SPECIES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA		
<input type="checkbox"/> CLEAR, NATURAL LINE IMPRESSED ON BANK	<input type="checkbox"/> CHANGES IN SOIL CHARACTER	<input type="checkbox"/> SHELVING
<input checked="" type="checkbox"/> VEGETATION MATTED DOWN, BENT OR ABSENT	<input checked="" type="checkbox"/> SEDIMENT DEPOSITION	<input type="checkbox"/> SCOUR
<input type="checkbox"/> LEAF LITTER DISTURBED OR WASHED AWAY	<input type="checkbox"/> SEDIMENT SORTING	<input checked="" type="checkbox"/> WATER STAINING
<input type="checkbox"/> DESTRUCTION OF TERRESTRIAL VEGETATION	<input type="checkbox"/> PRESENCE OF LITTER OR DEBRIS	<input type="checkbox"/> OTHER:
<input checked="" type="checkbox"/> ABRUPT CHANGE IN PLANT COMMUNITY	<input type="checkbox"/> PRESENCE OF WRACK LINE	

PHOTOGRAPHS	

Project _____
Waterbody Data Sheet

FEATURE ID: <u>34141087-02</u>
WATERBODY NAME:

SURVEY DATE: <u>10/25/11</u>
INVESTIGATOR: <u>M.M. JS</u>

FLOW CHARACTERISTICS
<input type="checkbox"/> EPHEMERAL <input checked="" type="checkbox"/> INTERMITTENT <input type="checkbox"/> PERENNIAL
CURRENT WATER WIDTH AT CROSSING: <u>10</u> FT
CURRENT WATER DEPTH AT CROSSING: <u>1</u> FT

SUBSTRATE
<input type="checkbox"/> BEDROCK <input checked="" type="checkbox"/> SILT <input type="checkbox"/> GRAVEL <input type="checkbox"/> CLAY <input type="checkbox"/> SAND <input type="checkbox"/> OTHER _____
<input checked="" type="checkbox"/> RUNS
<input checked="" type="checkbox"/> POOLS
<input checked="" type="checkbox"/> RIFFLES

BANK CHARACTERISTICS	
LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: <u>5</u> FT	HEIGHT: <u>5</u> FT
SLOPE <input checked="" type="checkbox"/> 0 - 30° <input type="checkbox"/> 31 - 45° <input type="checkbox"/> 46 - 60° <input type="checkbox"/> 61 - 90°	SLOPE <input checked="" type="checkbox"/> 0 - 30° <input type="checkbox"/> 31 - 45° <input type="checkbox"/> 46 - 60° <input type="checkbox"/> 61 - 90°
WIDTH (HIGHEST BANK TO HIGHEST BANK): <u>4/20</u> FT	
EVIDENCE OF EROSION: <u>None apparent</u>	
SCOUR POTENTIAL: <u>Low, well vegetated</u>	

RIPARIAN HABITAT
RIPARIAN VEGETATION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
RIPARIAN SPECIES PRESENT: <u>Tup. lat., Eleocharis, Sp. spec. cul. str., Ag. ref., Rum. sp., Ast. line, Sol. can</u>
INVASIVES/NOXIOUS VEGETATION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
IF YES, SPECIES PRESENT: <u>Brs. ind. C. ov</u>
ADJACENT WETLAND <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
T & E SPECIES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA		
<input checked="" type="checkbox"/> CLEAR, NATURAL LINE IMPRESSED ON BANK	<input type="checkbox"/> CHANGES IN SOIL CHARACTER	<input type="checkbox"/> SHELVING
<input checked="" type="checkbox"/> VEGETATION MATTED DOWN, BENT OR ABSENT	<input type="checkbox"/> SEDIMENT DEPOSITION	<input type="checkbox"/> SCOUR
<input type="checkbox"/> LEAF LITTER DISTURBED OR WASHED AWAY	<input type="checkbox"/> SEDIMENT SORTING	<input type="checkbox"/> WATER STAINING
<input type="checkbox"/> DESTRUCTION OF TERRESTRIAL VEGETATION	<input type="checkbox"/> PRESENCE OF LITTER OR DEBRIS	<input type="checkbox"/> OTHER:
<input checked="" type="checkbox"/> ABRUPT CHANGE IN PLANT COMMUNITY	<input type="checkbox"/> PRESENCE OF WRACK LINE	

PHOTOGRAPHS	

Allato Line Project
Waterbody Data Sheet

FEATURE ID: <u>33141087-01</u>
WATERBODY NAME:

SURVEY DATE: <u>10/25/11</u>
INVESTIGATOR: <u>MM, JS</u>

FLOW CHARACTERISTICS
<input type="checkbox"/> EPHEMERAL <input checked="" type="checkbox"/> INTERMITTENT <input type="checkbox"/> PERENNIAL
CURRENT WATER WIDTH AT CROSSING: <u>20</u> FT
CURRENT WATER DEPTH AT CROSSING: <u>1</u> FT

SUBSTRATE
<input type="checkbox"/> BEDROCK <input checked="" type="checkbox"/> SILT <input type="checkbox"/> GRAVEL <input type="checkbox"/> CLAY <input type="checkbox"/> SAND <input type="checkbox"/> OTHER _____
<input checked="" type="checkbox"/> RUNS <input checked="" type="checkbox"/> POOLS <input checked="" type="checkbox"/> RIFFLES

BANK CHARACTERISTICS	
LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: <u>50</u> FT	HEIGHT: <u>40</u> FT
SLOPE <input type="checkbox"/> 0 - 30° <input type="checkbox"/> 31 - 45° <input checked="" type="checkbox"/> 46 - 60° <input type="checkbox"/> 61 - 90°	SLOPE <input type="checkbox"/> 0 - 30° <input type="checkbox"/> 31 - 45° <input checked="" type="checkbox"/> 46 - 60° <input type="checkbox"/> 61 - 90°
WIDTH (HIGHEST BANK TO HIGHEST BANK): <u>350</u> FT	
EVIDENCE OF EROSION: <u>None</u>	
SCOUR POTENTIAL: <u>Low - well vegetated</u>	

RIPARIAN HABITAT
RIPARIAN VEGETATION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
RIPARIAN SPECIES PRESENT: <u>3m pec, low bar, River or, T. nutty, Pop del</u>
INVASIVES/NOXIOUS VEGETATION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
IF YES, SPECIES PRESENT: <u>Ph. ar</u>
ADJACENT WETLAND <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
T & E SPECIES <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA		
<input type="checkbox"/> CLEAR, NATURAL LINE IMPRESSED ON BANK <input checked="" type="checkbox"/> VEGETATION MATTED DOWN, BENT OR ABSENT <input type="checkbox"/> LEAF LITTER DISTURBED OR WASHED AWAY <input type="checkbox"/> DESTRUCTION OF TERRESTRIAL VEGETATION <input checked="" type="checkbox"/> ABRUPT CHANGE IN PLANT COMMUNITY	<input type="checkbox"/> CHANGES IN SOIL CHARACTER <input type="checkbox"/> SEDIMENT DEPOSITION <input type="checkbox"/> SEDIMENT SORTING <input type="checkbox"/> PRESENCE OF LITTER OR DEBRIS <input type="checkbox"/> PRESENCE OF WRACK LINE	<input type="checkbox"/> SHELVING <input type="checkbox"/> SCOUR <input checked="" type="checkbox"/> WATER STAINING <input type="checkbox"/> OTHER:

PHOTOGRAPHS	

Allete Line Project
Waterbody Data Sheet

FEATURE ID: ~~3211081~~ 3114108701
WATERBODY NAME:

SURVEY DATE: 10/25/11
INVESTIGATOR: MM, JS

FLOW CHARACTERISTICS

☐ EPHEMERAL
☒ INTERMITTENT
☐ PERENNIAL

CURRENT WATER WIDTH AT CROSSING: 2 FT

CURRENT WATER DEPTH AT CROSSING: .5 FT

SUBSTRATE

☐ BEDROCK ☒ SILT
☐ GRAVEL ☐ CLAY
☐ SAND
☐ OTHER _____

☐ RUNS
☐ POOLS ? in 14 fall
☐ RIFFLES

BANK CHARACTERISTICS

LEFT BANK (WHEN FACING DOWNSTREAM)	RIGHT BANK (WHEN FACING DOWNSTREAM)
HEIGHT: 25 FT	HEIGHT: 2 FT
SLOPE <input type="checkbox"/> 0-30° <input type="checkbox"/> 31-45° <input type="checkbox"/> 46-60° <input checked="" type="checkbox"/> 61-90°	SLOPE <input checked="" type="checkbox"/> 0-30° <input type="checkbox"/> 31-45° <input type="checkbox"/> 46-60° <input type="checkbox"/> 61-90°
WIDTH (HIGHEST BANK TO HIGHEST BANK): 28 FT	
EVIDENCE OF EROSION: plowed	
SCOUR POTENTIAL: light plowed through i on slope	

RIPARIAN HABITAT

RIPARIAN VEGETATION ☒ YES ☐ NO

RIPARIAN SPECIES PRESENT: *Ph. orn., blue jays, Ag. reg., Ast. lvs., sum. cr.*

INVASIVES/NOXIOUS VEGETATION ☒ YES ☐ NO

IF YES, SPECIES PRESENT: *Ph. orn., C. cr.*

ADJACENT WETLAND ☐ YES ☒ NO

T & E SPECIES ☐ YES ☒ NO

IF YES, IDENTIFY SPECIES AND LOCATION:

OHWM CRITERIA

<input type="checkbox"/> CLEAR, NATURAL LINE IMPRESSED ON BANK	<input type="checkbox"/> CHANGES IN SOIL CHARACTER	<input type="checkbox"/> SHELVING
<input type="checkbox"/> VEGETATION MATTED DOWN, BENT OR ABSENT	<input type="checkbox"/> SEDIMENT DEPOSITION	<input type="checkbox"/> SCOUR
<input type="checkbox"/> LEAF LITTER DISTURBED OR WASHED AWAY	<input type="checkbox"/> SEDIMENT SORTING	<input checked="" type="checkbox"/> WATER STAINING
<input type="checkbox"/> DESTRUCTION OF TERRESTRIAL VEGETATION	<input type="checkbox"/> PRESENCE OF LITTER OR DEBRIS	<input type="checkbox"/> OTHER:
<input checked="" type="checkbox"/> ABRUPT CHANGE IN PLANT COMMUNITY	<input type="checkbox"/> PRESENCE OF WRACK LINE	

basin plowed recently - difficult to delineate

PHOTOGRAPHS

Mitigation Survey Results

Tree and Shrub Mitigation Survey Results/Requirements Per Site Permits

For Minnesota Power's Bison 4 and SW Oliver 230 KV HVTL Extension

ND PUC Docket Numbers PU-13-127 & PU-11-620

Landowner and Species of Tree/Shrub	Trees/Shrubs Removed
Anton & Cynthia Heidrich	33
Eastern cottonwood	1
Hawthorn	6
Russet buffaloberry	6
Silver buffaloberry	20
Clinton Redmann	14
Siberian elm	4
Silver buffaloberry	10
David & Carol Skalsky, Leonard & Mary Hueske	5
Chokecherry	3
Peachleaf willow	2
Dennis & Joan Peltz	36
American elm	10
Green ash	13
Siberian elm	13
Duane & Lynette Keller	52
American elm	8
American plum	4
Boxelder	1
Chokecherry	20
Green ash	3
Hawthorn	9
Siberian peashrub	7
Elmer & Mable Bauer	4
American elm	4
Esther Keller	5
American elm	5
Eunice Schirado L.E.; ETAL	30
Siberian elm	30
Evelyn Conitz ~ LE	16
American plum	2
Canada buffaloberry	4
Chokecherry	5

Silver buffaloberry	5
Frances Windhorst	5
Chokecherry	4
Green ash	1
Jason & Melanee Pulver	2
Russian olive	2
Jerome & Yvonne Voegele	15
Boxelder	12
Russian olive	3
Kenny Klingenstein - Kari & John Barlund	5
American elm	5
Lyle Kinnischtzke	13
Cottonwood	3
Green ash	10
Roger & Eunice Bueligen	8
Chokecherry	7
Siberian elm	1
Roger & Marvel Klingenstein	7
Chokecherry	7
Schultz Trust	4
Siberian elm	4
Terrence Leingang	32
Green ash	4
Siberian peashrub	28
Warren & Delores Reiner	4
Chokecherry	4
Total Total	285